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WANTED—A HOUSING PLAN OF CAMPAIGN

THE coming Election is likely to prove a milestone in affairs other than those connected with government. For the building industry it heralds the opening of a fighting campaign to rehouse Britain and to re-equip her with essential buildings in which neither the Government in power nor the industry can dare to fail.

In this campaign Government policy and the industry are, in the public mind, linked. A target has been set (and re-affirmed by Mr. Sandys in the Housing Debate in the Commons last week) of 300,000 permanent houses by May, 1947, and that considerable portion of the public which is at present homeless will be ready to accept nothing less. If that target is not well and truly reached, the chances of survival of whichever political party is in power will be slim indeed, and a full measure of blame will accrue to the other party to the presumed agreement—the building industry.

It will be well, therefore, to examine the situation. There is no evidence to show that the responsible leaders of the industry, and particularly the employers and operatives, were taken into the Government's confidence when Lord Portal first announced the Cabinet's plans. No doubt the Government had the benefit of expert advisers, but it does not appear that the seemingly obvious step was taken of consulting the official building organisations. That is not only bad democracy—worse, it is bad judgment. The situation has now arrived in which unilateral pronouncements are made by or on behalf of the Government which lead the unsuspecting citizen to one of two conclusions—either that the building industry is in full agreement with the official pronouncements or that it just doesn't matter anyway. This was particularly evidenced in the otherwise able leading article in *The Times* of June 7 which, in warning the electorate of the dangers manifest in competing electoral promises of housing output, assumes that all that is needed is an agreed Governmental policy for reconstruction, including houses. We can find in that article no mention of the industry's viewpoint or of its ability, in terms of legislative framework, men and materials, to execute whatever programme is decided. The impression gains ground, in fact, that housing is an affair of official pronouncement rather than, in the ultimate, a matter of technical and human achievement.

If this state of thought is current, the building industry must accept a large share of blame. It is composed largely of men who are better at their job of building than at the business of framing policy. Yet it is just that very business of policy which now is so urgently required. Wherever two or three builders are gathered together the observer will hear the words "off with controls." But, it may be asked, how can controls be taken off unless and until the industry shows that it is fit to throw off the shackles of wartime regimentation, that it is, in short, a virile, forward-looking industry, with a policy and a clear conception of what kind of background, political and economic, it requires to reduce that policy to hard fact—*i.e.*, houses and buildings?

The building industry as such has not made any public pronouncement of policy. It has conducted a series of desultory exchanges with various Government Departments on particular issues but it has not, to public knowledge at any rate, boldly stated under what conditions it can expect to implement the two-year programme. For this reason the industry has laid itself open to the charge that it is better at criticising the plans of others than of itself making a plan.

No doubt it will be said that planning is impossible until certain decisions—*e.g.*, on the use of land—are taken. With this contention we do not agree. Let the building industry put forward its plan and state its conditions for fulfilment. Matters on which it must declare itself will include:

(*a*) The immediate release of architects and technicians without whom there can be no housing or constructional programme;

(*b*) The use of land;

(*c*) The extent to which private enterprise is expected to function within the next two years;

(*d*) When Mr. Willink's promise that subsidy shall be made available to private enterprise house-builders is to be ratified, and the amount of such subsidy;

(*e*) Production and distribution of materials;

(*f*) The number of men, both executives and operatives, required; and

(*g*) A balanced programme of housing and other construction.

The industry must also outline which controls should be retained and which should be removed as being hampering and unnecessary. Here the Essential Work Order would undoubtedly come in for review.

The industry should, in fact, boldly set forth the optimum conditions under which it can perform the task which the Government has undertaken on its behalf.

It is significant of the state of mental doldrums in which the industry at present drifts that the "first 300,000" is still after a year referred to as "a target." By this time it should be a programme, a detailed plan of campaign, not merely an objective—a campaign worked out with the same drive, national spirit and enthusiasm as "Mulberry," "Pluto" or any of the proud technical achievements of the war.

Both Government and industry are overdue in realising this, nor is a Government in the throes of electioneering now likely to remedy the situation. It is, in our view, the psychological moment for the building industry to give the lead with a voice which shall bring fresh winds of hope to clear the air of the clouds of inaction and frustration.

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The Royal Gold Medal.

THE President of the R.I.B.A. has received the following letter from Academician Victor Vesnin :—

Moscow, April 22, 1945.

DEAR MR. THOMAS,—I am much honoured to receive notice of the award to me of the Royal Gold Medal, 1945, for Architecture.

May I ask you to accept and convey to the Council of the R.I.B.A. my appreciation of the great honour thus accorded me. It affords me particular pleasure to find my name included in the glorious roll of Medallists now, at a time when the people of my country and Great Britain are waging a heroic struggle shoulder to shoulder against a common enemy. In this struggle difficult and honourable responsibilities have been laid upon the shoulders of architects. We have to give new houses to millions of people who have been deprived of hearth and home by barbaric Hitlerism. We have to build new towns, create new forms of contemporary architecture which will satisfy the great demands of the age.

In this vast and complex task collaboration between the architects of the U.S.S.R. and Great Britain acquires particular significance. I am convinced that this collaboration will bear fruit in the near future, and I regard the great honour accorded me by the R.I.B.A. as a symbol of collaboration between our two countries.

May I then take advantage of this occasion to transmit to all members of the R.I.B.A. and all British architects heartfelt and friendly wishes for the success of their great creative work.

With very best wishes, my dear President,

Sincerely yours,

(Signed) VICTOR VESNIN.

Prime Minister Thanks the Builders.

THE President of the National Federation of Building Trades Employers, Mr. G. W. Buchanan, has received the following message from the Prime Minister in reply to the telegram of congratulation he sent him on behalf of the building industry on the eve of VE-Day :—

"I have been deeply touched by all the messages of good will which have reached me at this time. Thank you so much for your kind thought. — WINSTON S. CHURCHILL."

Memorial to Frederick Bligh Bond.

A PLAN is on foot to erect a canopied stone reredos in the Church of St. John, Glastonbury, as a memorial to the late Frederick Bligh Bond, F.R.I.B.A., whose name is associated with the church, which contains a series of oak screens to his design, and also with the excavations at Glastonbury. Those wishing to contribute should communicate with the Vicar, the Rev. Lionel S. Lewis, M.A.

Town Planning Institute Conference.

IN connection with the planning exhibition arranged by the Corporation of Manchester and the Manchester and District Regional Planning Committee, at the City Art Gallery, Mosley-street, Manchester, the Town Planning Institute has arranged to hold a conference on Friday and Saturday, August 31 and September 1, under the chairmanship of the President-elect of the Institute, Mr. Thomas Sharp.

Housing Scheme Architect Wanted.

THE Frimley and Camberley U.D.C. is desirous of employing the services of an architect to design approximately 100 permanent houses. The special scale of charges prepared by the R.I.B.A. for State-aided housing schemes will apply. Applications, giving full particulars of qualifications and experience, accompanied by specimens of work, and endorsed "Architect," should reach Mr. Alan Bradley, Clerk, Municipal Buildings, Camberley, not later than June 23.

The Institution of Civil Engineers.

SIR PEIRSON FRANK, Chief Engineer of the London County Council, has been elected President of the Institution of Civil Engineers for 1945-46. Prior to his appointment to the L.C.C. Sir Peirson Frank was City Engineer for Liverpool.

Labour Management in the Industry.

MR. G. W. BUCHANAN, President of the National Federation of Building Trades Employers, is to preside at the opening session of a conference of the Institute of Labour Management in London on June 21. Mr. T. P. Bennett, C.B.E., F.R.I.B.A., is to address the conference on "Personal Problems in the Building Industry," and Mr. Richard Coppock, C.B.E., is to speak on "The Aims and Needs of Building Operatives."

Appointment.

MR. L. CLARK-DAVIES, deputy borough engineer and planning officer at East Ham, has been appointed borough engineer at Bridlington (Yorks).

Professional Announcements.

MR. FREDERIC E. TOWNDROW, F.R.I.B.A. (formerly a Senior Architect in the Directorate of Post-War Building and, recently, Controller of Experimental Building Development in the Ministry of Works), has now resumed private practice at Iddesleigh House, Caxton-street, Broadway, Westminster, S.W.1 (tel. : Abbey 3311). As soon as Mr. Geoffrey Ransom is released from the Army the firm will resume its previous title, Towndrow and Ransom, F.&A.R.I.B.A., P.A.S.I., A.M.P.T.I., Chartered Architects, Housing, Town Planning, and Building Industries Consultants.

MR. J. R. MOORE, A.R.I.B.A., having taken up the appointment of Architect to the Brierley Hill Urban District Council, will be pleased to receive trade catalogues, with particular reference to housing, addressed to Council Offices, Moor-street, Brierley Hill, Staffs.

R.A. Exhibition, 1945. Drawn by F. E. Green.

HOUSE IN THE WYE VALLEY.

BY MAURICE E. TAYLOR, A.R.I.B.A.

From *The Builder* of 1845.

Saturday, June 14, 1845.

MAKING CLEAN THE OUTSIDE.—They are cleansing St. Paul's of the soot and dust of many years. Washing won't serve the purpose; walls and pillars are scraped and holystoned; the church gets a "dry scrub"—like Nicholas Nickleby when the well was "froze." . . . The Dean and Chapter pay their menials, as tavern keepers do, by permitting them to levy contributions on visitors. At the threshold of St. Paul's, at every landing on its stairs, in every dim gallery, the luckless visitant is attacked by some extortioner in the shape of an old man or older woman. Even during the reading of prayers these semi-ecclesiastical showmen continue to gather pence in the aisles.—From an article reprinted from *The Spectator*.

HOUSING POLICY

DEBATE IN THE COMMONS.

OPENING a debate on housing in the House of Commons on June 7, MR. GREENWOOD said the fact that no decision had been taken on the Uthwatt and earlier reports meant that a real beginning of a solution of the housing problem had been postponed for at least a decade. The Government had concealed their inability to deal with the problem under a smoke-screen of superficial activity. Mass production of materials and the manufacture of units for housing should be organised by collaboration between the Government and the local authorities. A close hand must be kept on prices of building materials. The Government, in collaboration with the local authorities, should embark on a scheme of bulk purchase which, if carried out on a big scale, might easily reduce the price of building materials by 25 per cent. or more. He would like to see an early demobilisation of building trade workers, many of whom were to-day eating their hearts out in munition factories and doing nothing. If a generous housing policy was adumbrated for a period of years the local authorities would be placed in a position of embarrassment if not of potential bankruptcy unless some aid was given to them. It would be sound and economic policy for the Government to buy land and let it at nominal rents to local authorities, having regard to the use to which it was to be put.

Permanent Building Plans.

MR. SANDYS, Minister of Works, said that with the end of the war in Europe things which it had only been possible to talk about could now actually be done. Men and women were returning to the industry in increasing numbers and permanent house building could be restarted. The flag had been dropped and the housing race was on. The preparatory phase of the Government's temporary housing programme was virtually completed several months before the end of the European war. They had now got well into the second stage. Up to date about 1,000 houses had been completed; erection had started on about 2,500; sets of components for about 5,000 houses had been delivered from the factories; foundation slabs and drains on sites for 12,000 houses were in course of construction. Sets of house components of the Uni-seco type were coming off production in a steady flow at a rate of between 800 and 1,000 a month. The production of the Tarran and Arcon types had started and should build up to a rate, taken together, of about 3,000 a month by the autumn. The first few American houses had already arrived, and he was assured that the greater part of the total consignment of 30,000 would be dispatched before the end of the year. The temporary housing programme would be in full swing by the autumn.

Permanent houses were our most urgent need, and local authorities had been asked to go ahead with all speed and place their contracts for permanent house building. It was the Government's desire that where possible contracts should be given to local builders using local labour. More than sufficient sites for the whole of the two-year programme of 300,000 permanent houses had been acquired and approved, and recent returns from local authorities indicated that, provided the labour could be made available, some 100,000 permanent sites, completely developed with roads and sewers, would be ready by the autumn. Private enterprise house-builders would also be given an opportunity to play their part.

It was the Government's policy to supplement traditional building with a programme of permanent perfabricated houses. Development work was being pressed forward on a dozen of the most promising of these non-traditional systems of construction. This work was being undertaken by the firms themselves, with the advice and assistance of the Ministry of Works. Satisfactory progress was also being made with the design of the permanent two-storey pressed steel house, employing the plant and system of construction originally evolved for the temporary pressed steel bungalow. It was hoped that this type could be in production by the middle of next year.

To ensure that the various designs were satisfactory from the architectural standpoint he was submitting them to the Royal Fine Art Commission, and had also invited a panel composed primarily of women's organisations under the chairmanship of Lady Reading to comment on the internal lay-out from the standpoint of domestic convenience.

Every practicable step was being taken to expand the labour force of the building industry as early as possible. The Government had also decided to call for the names of all building trade operatives now engaged on war production, and measures had been taken to carry out this registration at once. The Government's plan was to double the strength of the building industry from well under 400,000 at present up to 800,000 within one year after the end of the German war. In some months the intake would be as much as 50,000. It would be no easy task to get this large number of operatives smoothly absorbed into the industry and to ensure that they got quickly placed among the tens of thousands of building trade employers throughout the country. Every possible step was being taken in planning the national building programme and the distribution of contracts to minimise the danger of temporary or local dislocation.

Control of Prices.

The Government intended to maintain a close check upon distribution costs as well as on the prices of building materials themselves. Building materials accounted for about three-fifths of the cost of a house. In no circumstances would the Government allow the nation's needs to be exploited. If, after an examination of production costs, there was evidence of profiteering, the Government would not hesitate to step in and to fix a ceiling price for the material in question. Ceiling prices for almost all the principal building materials had already been fixed by agreement with the various sections of the industry. They would be continuously watched, and revised if necessary. He was hopeful that it would be possible to maintain fair prices by voluntary arrangement, which in practice worked far better than any form of compulsion.

The Government stood by the programme of house-building formulated and announced by the late Coalition Administration—a long-term programme for building 3,000,000 to 4,000,000 houses in 10 to 12 years, and a short-term programme with a minimum of 500,000 new houses built or building within two years from the end of the war with Germany. Of these, at least 300,000 were to be permanent, and of the remainder at least 145,000 would be temporary bungalows. He asked the leaders of the Labour Party who were members of the War Cabinet which approved the White Paper on housing to make their position clear during the debate. If they intended to repudiate the programme outlined and to dangle before the electors the prospect of a bigger and more ambitious programme, the House had a right to be told what discoveries they had made during the last fortnight which entitled them to take a rosier view of the possibilities of house-building.

Debate.

MR. FOOT (Dundee, L.) said that if the issue was fairly and squarely put to the men in the Forces that certain men must be released out of turn in order that others might have homes and jobs to go to, he believed the necessary response would be forthcoming.

MR. MCNEIL said that the only hope of having houses in this country was that for a considerable time rigid controls would have to be maintained. When the Prime Minister made his radio speech apparently the kind of control needed meant State slaves, but when his son-in-law spoke it meant houses.

VISCOUNTESS ASTOR said the Government had been marvellous in winning the war, but there was disappointment that they did not at once have a great plan for rebuilding Britain. She hoped that when the Prime Minister came back after the General Election he would cut across all the difficulties and say that housing was a priority.

MR. ELLIOT said that there was nothing in the story that a shortage of land was holding up housing. There were 27,000 acres of land at present the property of local authorities on which no stone had been laid. Ministers in the new Parliament would have a terrible housing problem to face, and great as the storm now was it was nothing to the storm that would rage about their ears.

MR. KEY said that what everyone wanted to know was why this dilatory, dallying procedure on housing was allowed to continue. It would never have been allowed in the conduct of the war against Germany and the war against squalor and bad housing was every bit as urgent.

Priority for Bombed Houses.

MR. WILLINK, replying to the debate, said that the building programme for the next two years must include provision for the repair and rebuilding of houses either totally destroyed or so damaged as to be useless, and which were entitled to a cost of works payment under the War Damage Acts. The Government felt that such

COMING EVENTS

Tuesday, June 19.

R.I.B.A. Council Election Result. Prof. L. B. Budden on "Future of Architectural Education." 66, Portland-place, W.1. 6 p.m.

HOUSING CENTRE. Mr. Philip James on "Art Centres." 13, Suffolk-street, S.W.1. 1.15 p.m. (buffet lunch, 12.45 p.m.).

INSTITUTION OF HEATING AND VENTILATING ENGINEERS. Mr. A. L. Longworth on "Fuel Saving by Thermostatic Control." At Mechanical Engineers, Storey's-gate, S.W.1. 6 p.m.

Wednesday, June 20.

ARCHITECTURAL SCIENCE BOARD. Mr. F. L. Brady on "External Rendered Finishes." 66, Portland-place, W.1. 5.30 p.m.

Thursday, June 21.

TOWN PLANNING INSTITUTE. Annual Meeting and Open Discussion on "Future Development of Planning and the Work of the Institute" (Mr. Morrison's address cancelled). Waldorf Hotel, Aldwych, W.C.2. 5 p.m.

LONDON SOCIETY. Sir Patrick Abercrombie on "Plan for Greater London," At 12, Great George-street, S.W.1. 5 p.m.

UNIVERSITY OF LONDON. Mr. Nigel Hannen delivers 4th Extension Lecture on "Contractor's Site Organisation." London School of Hygiene, Keppel-street, W.C.1. 5.30 p.m.

Friday, June 22.

NATIONAL SAFETY CONGRESS. At Institution of Civil Engineers, Great George-street, S.W.1. 10 a.m. (continuing over Saturday).

ROYAL SANITARY INSTITUTE. Dr. C. O. Stallybrass on "Public Health and Social Service" (10.45 a.m.). Mr. L. H. Keay on "Post-War Housing" (2 p.m.). Royal Institution, Liverpool.

houses, if of moderate size, had a high claim to priority in the building programme. There were about 50,000 of them. It would not be justifiable at the present to devote labour and materials to the rebuilding of large houses required for the accommodation of one family only. Therefore it was proposed in this first period that priority should be given only to houses the rateable value of which in 1939 did not exceed in London £100 and elsewhere £75. This category would cover probably 90 per cent. of the houses he had mentioned.

The new building programmes of each local authority would be authorised by him in the light of information about the quantity of labour and materials likely to be available, and he would arrange his authorisation so as to secure that the rebuilding of these war-destroyed houses should proceed proportionately with the new house programme. These houses would include not only privately owned houses but local authority houses, and having been told their ration it would be for the local authorities to decide the order in which the eligible houses should be rebuilt and to receive certificates of essentiality. The actual rebuilding would be left in the hands of the owners. He urged on the owners of these destroyed properties the wisdom of joining up with their neighbours in the same area and of employing the same builder, so that their properties could be rebuilt together and thus increase both speed and efficiency. In Scotland there would be similar, though not identical, arrangements.

Much of what had been said in Opposition speeches on the subject of land rested on a most fallacious basis. He knew there were special features for the expensive land in the centre of London, but, excluding London, the element of the cost of land on the local authority houses over the five years ending March 31, 1938, was 17s. 4d. per house per annum, or 4d. per week, and the corresponding figure for recent acquisitions of land showed that the element of the cost of land was going to be a little lower—just about 3¾d.

The suggestion that either the cost of land or the difficulty of acquiring land was in any sense an obstacle to our housing programme was fantastic. At the moment housing authorities in Great Britain owned enough land for 276,000 permanent houses and were contemplating the purchase of sites for an additional 300,000 houses. Sites for 52,000 houses were fully developed and many more in course of development. As to temporary houses, 119,000 had been allocated in England and Wales. Between 10,000 and 12,000 sites were being approved every month, and there was every reason to believe that the total number of sites for temporary houses would be approved by July and acquired by December.

He felt great anxiety about the housing prospects of young couples setting up home for the first time. He had consulted with the Service Departments and local authorities to ensure that effective steps would be taken to enable those in need to submit their applications in a way that would ensure proper consideration.

Subsidies.

It had been the intention of the Coalition Government to introduce this session a Bill providing for subsidies in respect of small houses built for sale or letting by private builders. There never had been any question of either making or promising payments to anybody without Parliamentary sanction. Under the powers already conferred, the Government intended to make it possible for private persons to begin the building of small houses during the current building season. The Government proposed to authorise a start with house-building by private people by means of the machinery of Licensing, for which the Minister of Health was responsible. Licences would be issued only for building houses which were between 800 ft. and 1,000 ft. superfical area, and of which the ceiling price—if the house was sold—would be not more than a maximum of £1,200. The number of houses to be licensed in any area would be settled in consultation with the local authorities and would be in relation to the available labour resources and the house-building programme of the local authorities.

ARCHITECTS IN POST-WAR BUILDING

EARLY DEMOBILISATION URGED BY R.I.B.A.

THE Royal Institute of British Architects have taken every possible opportunity of impressing on Government Departments the vital necessity of employing architects in the preliminary stages of all post-war building. They have pointed out that the architectural and surveying professions are the design and planning services of the building industry which, unlike other industries, does not design for its own production; further, that design work must be practically completed before building can start and that the preparation of layout plans, detailed designs, working drawings and contracts takes time and cannot be unduly hurried without loss of efficiency.

In particular, the Government's housing programme is likely to be retarded or inefficiently carried out unless the services of architects are properly employed in the preliminary stages.

The Royal Institute of British Architects do not observe that the Government's demobilisation policy reveals a realisation of these facts. In spite of the fact that the Minister of Health and the Minister of Works, recognising that the services of qualified architects are essential to good quality housing, have strongly urged local authorities to employ them on the layout and design of post-war housing schemes, the demobilisation plans laid before Parliament do not indicate any provision for the release of architects in sufficient numbers and at a suitable stage to enable these recommendations to be implemented.

The profession of architecture has not been a reserved occupation under the National Service Act, and in consequence a considerable proportion of its members are serving in the Armed Forces. Whereas it was necessary to reserve from military service on the outbreak of war various categories of men and women whose services in civilian capacities were deemed necessary to the efficient prosecution of the war, it now appears clearly necessary to the successful and rapid provision of good housing to release from military duties sufficient numbers from all sections of the building industry, including architects and surveyors.

The Royal Institute of British Architects have produced and agreed with the interested Ministries statistics on the ratio of architects needed in respect of numbers of building craftsmen and labourers in full employment. The Royal Institute have urged that if the work of the building industry is to be properly planned the appropriate ratio of architects should be available at a sufficiently early stage.

Three general classes of architectural services are required—namely, the salaried staffs of the larger local authorities, a proportion of private practitioners to meet the needs of the many smaller local authorities who do not employ salaried architectural staffs, and a sufficient number of assistants for both.

The Royal Institute of British Architects have therefore submitted proposals to the Government for the release of architects based on the principle of age and length of service in all three of the above classes, keeping pace with the release of craftsmen and labourers, but with the requisite degree of acceleration to allow the planning of temporary and permanent housing schemes to be done before work starts.

At the same time the Royal Institute of British Architects wish to direct attention to the fact that housing cannot be separated from the large amount of reconditioning of schools, hospitals, etc., in blitzed areas. These buildings will be required so soon after the provision of housing as almost to form part of the housing programme itself. Further, as one means of meeting the housing shortage, it is proposed to modernise much obsolescent house property. Conversion work of this type cannot be begun without preparation beforehand of surveys, working drawings, specifications, contracts, etc. Finally, hard on the heels of the housing programme will follow the huge school building programme consequent on the Butler Education Act, the provision of factories and warehouses for export trade, shops to serve the new housing areas, etc. At present the Government are rightly concentrating on housing, but advanced planning for these other needs in the immediate future should not be overlooked.

R.I.B.A.

FOLLOWING are some notes from the minutes of the R.I.B.A. Council meeting of May 1 :—

The Hon. Treasurer.—Mr. L. Sylvester Sullivan's resignation as Hon. Treasurer was accepted with great regret and Mr. John L. Denman was elected Hon. Treasurer in his place.

Architectural Work, Cardiff.—It was reported that the South Wales Institute of Architects had sent a letter to the Town Clerk of Cardiff protesting against the proposals that the city's architectural work should be carried out by an architect acting under the City Engineer and Surveyor. At the request of the South Wales Institute, the R.I.B.A. wrote a letter in support of their action.

Ministry of Health Circular 188/44.—The attention of the Council was drawn to Circular 188/44 sent by the Ministry of Health to local authorities, in which reference was made to British Standards Institution Handbook No. 3. The small selection of standard specifications, particularly in the case of windows, appeared to restrict unduly the architect's freedom in design, and representatives of the War Executive Committee arranged to meet officials of the Ministry of Health to discuss the matter.

Conference Upon Methods of Social Survey.—On the recommendation of the Architectural Science Board the Council approved the holding of a conference at the R.I.B.A. in the late summer on Methods of Social Survey in Relation to Architecture and Planning. The conference will be organised by the Institute of Sociology and the Association of Planning and Regional Reconstruction and sponsored by the Architectural Science Board, who will consult with the Town and Country Planning Committee of the R.I.B.A.

GENERAL VIEW FROM BOOKING HALL

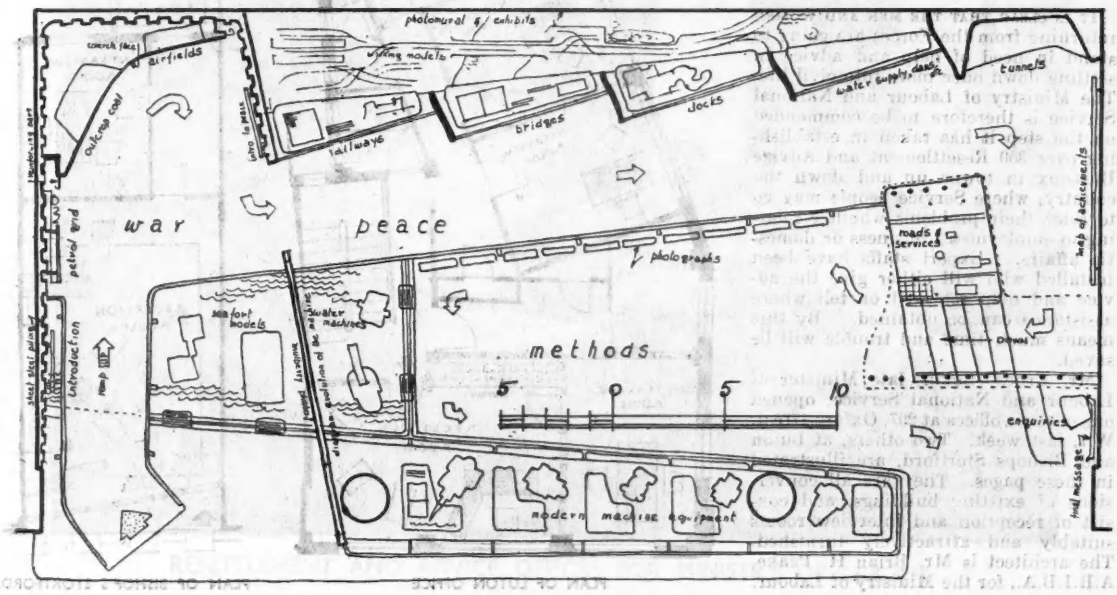
CIVIL ENGINEERING EXHIBITION

Designed By BRIAN PEAKE, A.R.I.B.A.

MISHA BLACK, CONSULTANT

THE MAIN PROBLEM IN PLANNING THIS EXHIBITION AT Charing Cross Underground Station for the Federation of Civil Engineering Contractors was to provide enough room for the many subjects to be exhibited without destroying the feeling of space at the end of the booking-hall. The plan was therefore worked out at two levels with the entrance on the left-hand side where it is found that people normally gravitate at Charing Cross. Much of the detailing was designed with an engineering character; the vertically fluted wall on the left of the entrance, for instance, represents sheet steel piling. This wall is painted a red-lead colour, the supports to the balustrade are white with a dark-blue-green hand-rail, most large wall surfaces are grey, and showcases and smaller areas are in pale-blue-green, dark red, terra-cotta or pale yellow.

The contractors for the exhibition were Beck & Pollitzer (Contracts), Ltd., and all metalwork was fabricated by John Mowlem & Co., Ltd. The exhibition was designed by Mr. Brian Peake, A.R.I.B.A., with Mr. Misha Black as consultant. The script was written by Adrian Thomas and the lettering and type face arranged by Charles Hasler, who also designed the map of achievements.



BOOK REVIEWS

How Should We Rebuild London? By C. B. PURDOM. London: J. M. Dent and Sons, Ltd. 12s. 6d. net. Pp. x, 326. Illustrated.

Mr. Purdom is a practical idealist as well as a competent writer. This beautifully printed volume affords much food for thought and a wealth of useful information. He says: "I have written this book because a vision is needed of what should be done so that collective effort may be fired by an impulse derived from the belief that it is possible." The book suffers from the fact that most of it was written before the famous "County of London Plan" was published, but delay in production allowed him to include pungent criticism of many of its proposals, as well as of the City Plan and of the reports of the Royal Academy and of the R.I.B.A.; also a brief summary of the Greater London Plan. He argues that London is an artificial product, and as such may be drastically remodelled to suit modern needs, without undue regard to sentiment. He pleads for a spiritual as well as a physical aim in town-planning, contending that this aspect has been ignored in most of the schemes published. He favours "terraced houses" and is against flats for families, observing that this is a Continental idea too readily accepted by young architects, who should be inspired by "a spirit of national confidence." . . . "The architect likes masses of building that give him easily exercised scope for his talents." Other targets for his satire are the L.P.T.B., the Portal House, the building industry, and, finally, the L.C.C. itself. He holds that the Academy Plan neglects "city biology" and is "façade, an architectural sales-counter." The R.I.B.A. Regional Plan gets some commendation as "useful" and "intelligent," while of the City Plan he observes that "the improvements are as few as possible." But his most searching criticism is reserved for the County of London Plan, which, in spite of its many merits, he considers to lack a scientific basis and to be too timid in some respects. He would "decant" a million more people from the County than the Plan proposes, and would distribute them, with a due share of London industries, in 50 new satellite towns. He reveals that the much-discussed "neighbourhood unit" is an American idea, and says that London is to be converted into "an innumerable number of Becontrees"—a nasty smack! "To talk about reviving the villages is nostalgic nonsense." He would abolish the L.C.C. altogether, substituting the Lord Mayor and Corporation, and would supersede the County Councils of Middlesex, Surrey, Herts, Kent and Sussex—as well as parts of Essex, Bucks, Berks and Beds—by a new Regional Authority. Finally, he crystallises his proposals by replanning an "obsolete" area of 200 acres in South London, an interesting scheme.

M. S. B.

The Town and Country Planning Act, 1944. By H. A. HILL, M.A. (London: Butterworth and Co. (Publishers), Ltd.) Price 10s. 6d., postage 4d. extra.

This book, which takes a place in the publishers' Emergency Legislation Service, gives the text of the Town and Country Planning Act, 1944, with comparative notes relating its provisions with those of previous Acts. For the purpose of implementing the increased powers conferred on local planning authorities, highway authorities and certain Ministers, provisions are made for Exchequer grants to facilitate good planning and the redevelopment of war-damaged areas as rapidly as practicable.

In view of the complexity of many of the provisions in this Act, it has been thought desirable to issue this complete text with annotations and a comprehensive introduction showing the place it takes in the general law relating to town and country planning. It is intended to be read in conjunction with the previous text-books on this subject by the same author, and brings these up to date; but at the same time the hint is given that further Acts will in due course be needed, dealing with planning, land acquisition, and similar subjects.

The Introduction summarises legislation from the first Town Planning Act of 1909 onwards, and includes references to other Acts relating to land, etc. This is followed by the text of the 1944 Act, each section being followed by copious notes in order to clarify its intention and by cases in which legal decisions may influence interpretation. These latter, while of definite value to the legal profession, would be rather outside the range of those others interested in planning. To a lesser degree this applies to the Schedules following the provisions of the Act, but it is clear that in a work of the character aimed at, all that has been included to make it complete in its scope is essential and could not have been omitted. The index is also good, and for those who require the comprehensive treatment of the subject which is provided it is difficult to see how this publication could have been improved.

H. V. L.

Books Received.

MUNICIPAL AND PRIVATE ENTERPRISE HOUSING. By R. L. Reiss. (London: J. M. Dent & Sons, Ltd.) 3s. 6d.

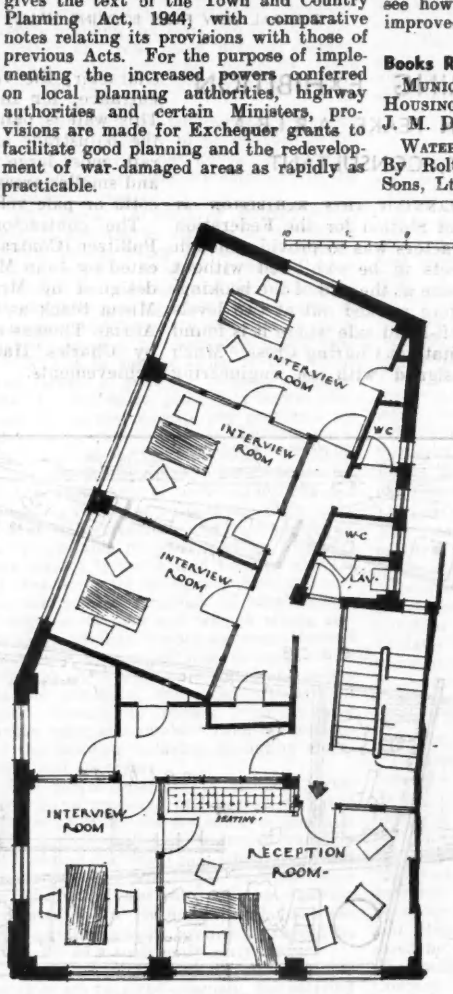
WATER DRAINAGE AND THE COMMUNITY. By Rolt Hammond. (J. M. Dent & Sons, Ltd. Price 3s. 6d.)

RESETTLEMENT AND ADVICE OFFICES, FOR THE MINISTRY OF LABOUR AND NATIONAL SERVICE

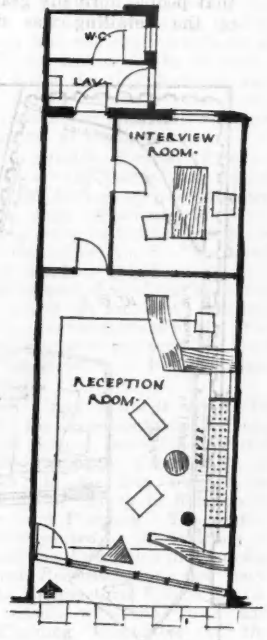
DESIGNED BY BRIAN PEAKE, A.R.I.B.A.

IT IS CLEAR THAT THE MEN AND WOMEN returning from the Forces are going to stand in need of help and advice in settling down once more into civil life. The Ministry of Labour and National Service is therefore to be commended on the step it has taken in establishing over 350 Resettlement and Advice Bureaux in towns up and down the country, where Service people may go to refer their problems whether relating to employment, business or domestic affairs. Expert staffs have been installed who will either give the advice and help required or tell where assistance can be obtained. By this means much time and trouble will be saved.

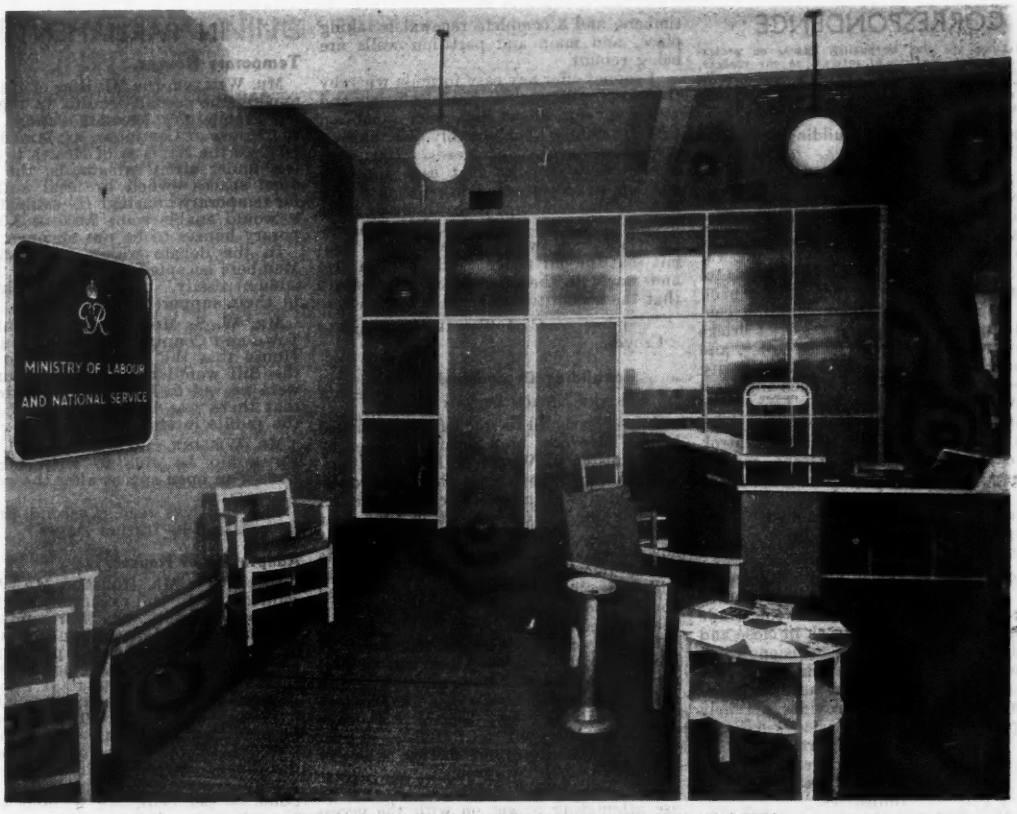
Mr. Ernest Bevin, late Minister of Labour and National Service, opened one of these offices at 297, Oxford-street, W.1, last week. Two others, at Luton and Bishops Stortford, are illustrated in these pages. They are all conversions of existing buildings, and consist of reception and interview rooms suitably and attractively furnished. The architect is Mr. Brian H. Peake, A.R.I.B.A., for the Ministry of Labour.



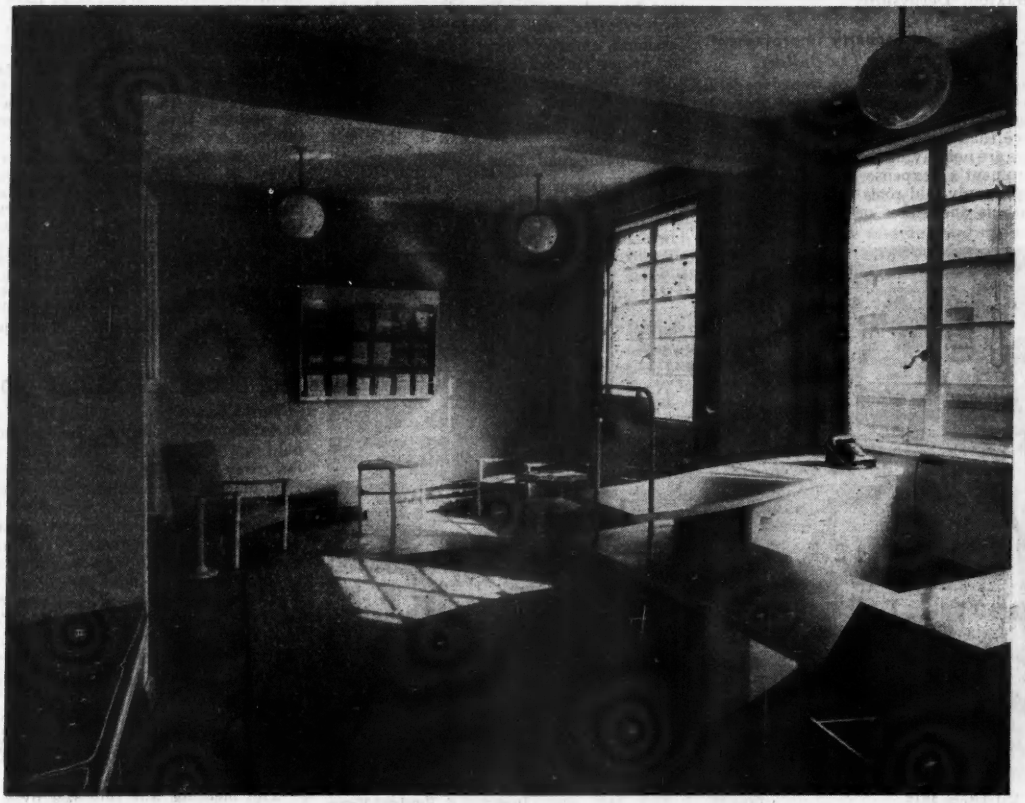
PLAN OF LUTON OFFICE



PLAN OF BISHOP'S STORTFORD.



Above: THE BISHOP'S STORTFORD OFFICE. *Below*: THE LUTON OFFICE.



RESETTLEMENT AND ADVICE OFFICES FOR MINISTRY OF LABOUR.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

"Price Rings" in the Building Industry.

To the Editor of *The Builder*.

Sir,—References are being made to the existence of "price rings" within the building industry and the responsibility of trade associations for the high cost of house building compared with pre-war levels. This cannot be said in regard to bricks, which constitute one of the principal materials of orthodox building construction, inasmuch as the prices of bricks are controlled by Government Order, and increases are only made with the authority of the Minister of Works. Such increases as have been sanctioned have been made to contribute towards higher costs over which the brick industry has no control. For example, the most recent modest increases of prices were necessitated by rises in the cost of coal—due to wage adjustments in the mining industry—and by wages advances in the brick-making industry.

Much abuse is being directed towards trade associations. They appear to be as necessary to industry as are the trade unions, with whom they work in close and friendly accord. There are occasions when the corporate voice of an industry should be heard, and the present agitation concerning "price rings" provides a timely example.

William Heaton,
President,
The National Federation of Clay Industries.
12, Hartington-road,
Buxton, Derbyshire.

W.D. Repairs and Property Improvement.

To the Editor of *The Builder*.

Sir,—I daresay some of your readers, when walking around the bombed areas in London, have been wide enough awake to observe that some, in fact many, property owners are not having too raw a deal at the Government's expense. To quote two examples only, old roofs are being stripped of battens and slates or tiles, some cases timbers, and a complete renewal is taking place, and main and partition walls are being rebuilt.

I cannot offer any easy formula whereby the various Borough Councils' officials and workmen can know the exact condition before bombing, but possibly the sanitary inspectors have some records. If enough repairs were done so that each property was left in no better condition than it was prior to the bombing, probably many more houses would be ready for occupation by the respective owners or tenants. I submit that the old adage, "All's fair in love and war" is the only redeeming feature that the authorities can find for defence.

C. J. Saward, F.I.A.S.
Croydon.

Rebuilding Demolished Houses.

To the Editor of *The Builder*.

Sir,—Nearly all the moderately damaged houses have now been repaired, either by the Ministry of Works or Local Authorities, leaving to be dealt with those properties which will more or less require rebuilding, and I consider it is time that some official announcement was made as to how long the existing repair arrangements are to remain in being. Do the official authorities intend to rebuild all demolished houses where a cost-of-works payment has been agreed?

In many cases the owner will wish his property to be improved and will be prepared to pay for such improvement, and in nearly all cases architects could improve on the original building. The War Damage Commission's form ROD 1 (published over a year ago) sets out the method whereby the cost of these improvements and alterations can be agreed with them, but it is no use attempting to get on with the necessary preliminaries if the owner finds later that he will not be allowed to employ his own architect and builder, as much professional time will have been wasted and the owner made liable for fees.

Now that the danger of further damage has passed, cannot we be allowed to know where we stand?

Norman J. Rawle.
76, Ondine-road, East Dulwich, S.E.15.

*** A statement of Government policy on this subject was made by the Minister of Health last week. See page 469.

R.A. Exhibition, 1945. Drawn by S. Rowland Pierce.

BY C. H. JAMES, A.R.A., AND S. ROWLAND PIERCE, F.R.I.B.A.

IN PARLIAMENT

Temporary Houses.

Mr. Willink, the Minister of Health, in moving the second reading of the Housing (Temporary Accommodation) Bill in the House of Commons, explained that it enabled the Minister of Health to authorise, under strict safeguards, the use of open spaces owned by local authorities for temporary housing. He estimated that it would enable some 7,000 or 8,000 temporary houses to be put on open spaces.

In the debate which followed, many Members accepted the Bill as a "regrettable necessity," but were not enthusiastic in their support of it.

Mr. W. S. Morrison, the Minister of Town and Country Planning, assured the House that the certificate called for by the Bill would not be granted unless it were proved to his complete satisfaction that there was no other way of serving the public interest.

Mr. Willink said that no local authority would be able to keep temporary houses on open spaces after the period of 10 years.

The Bill was read a second time and later passed its further stages.

Adaptation of Houses.

In reply to Mr. Horabin, Mr. Willink replied: With the exception of the City of London, Battersea, Bermondsey and Poplar, all the Metropolitan Boroughs are at present engaged on a programme of adapting houses for occupation by more than one family. The total number of properties now being adapted is 1,341, and it is anticipated that 4,219 dwellings will be produced as a result of this work.

About 95 per cent. of the resulting dwellings are not self-contained. In general, over the Metropolitan Area: Some 50 per cent. are without separate w.c.s. Some 15 per cent. are without bathrooms. Some 80 per cent. have shared bathrooms.

Two-Stage Building Methods.

Captain Cobb asked the Minister of Works whether it was proposed to provide facilities for the use of the two-stage method in the building of permanent houses.

Mr. Manningham-Buller, who replied, said that the Ministry were prepared to grant facilities for any experiments in the two-stage method of building permanent houses which appeared to be of sufficient technical merit, and promised to provide a substantial number of houses at a reasonable cost. As at present advised, however, the adoption of the two-stage method would involve considerable additional cost and had no advantages over the Duplex system.

THE ECCLESIOLOGICAL SOCIETY

The very good attendance at the Society's 106th annual general meeting, held at St. Martin's School of Art on Saturday, May 26, was a happy indication of more peaceful days. The chairman of the Council, Mr. D. Chisholm Simpson, presented the report for the year. Membership had increased by 32 and now totalled about 250. He was also able to announce that the most Rev. Dr. Geoffrey Fisher, Archbishop of Canterbury, had signified his acceptance of the Council's invitation to become patron in the place of the late Dr. William Temple.

A new and valuable feature innovated during the year was the occasional leaflets prepared by Mr. H. L. Mann, Keeper of the Wallace Collection, and circulated to all members, giving particulars of recent ecclesiological literature.

The meeting was followed by a lecture on "Church Chests—their use and misuse," by Mr. Edward Yates, F.S.A.

THE TOWN PLANNING INSTITUTE

PRESERVATION OF COASTAL AMENITIES IN WALES.

MR. T. ALWYN LLOYD, F.R.I.B.A., P.P.T.P.I., in a paper read on May 17 to the Institute, said that in comparing the Principality with its larger neighbour it was significant that the sea-coast occupied an even more prominent place in the map of Wales than in that of England. He found that the comparative figures were as follows :—

	Total Area (sq. miles)	Mileage of Coast
England	50,337	2,751
Wales (inc. Mon.) ...	8,006	479

It would be noted that the proportion of coast mileage to land mass in the latter country was nearly double that of the first-named, and there was no part of Wales that is farther away from the sea than 45 to 50 miles. The objective of all those concerned in planning for the future must be to ensure permanent conservation of all coastal amenities, coupled with schemes for imaginative development, where that was appropriate, and fuller public access for exploration and enjoyment.

In considering the present uses and potentialities of the seaboard of Wales it might be convenient to review them under separate categories, as follows :—

(1) Industrial and Commercial Uses.

Docks, harbours, ship repairing, exporting of coal and other merchandise, with the many industrial processes carried on at the large seaports of South Wales. The Docks undertakings at Newport, Cardiff, Barry, Port Talbot, Swansea and Llanelly were all owned by the Great Western Railway Company. There was much that could be done under planning schemes, to improve them as more efficient operating units for their chief functions, but also in creating a more orderly and attractive environment. In the national economy of these islands, the ports constituted one of the main sources of commercial prosperity, so there was every reason for ensuring that in the broad sense their layout and design were of the most modern. We should have to give much more study to them, and, under the stimulus of planning and improvement projects, be prepared to spend wisely in remedying traffic congestion and regulating the disposition of buildings large and small in a more seemly manner. Above all, it was incumbent on us to provide better surroundings for those who had to work and live in the vicinity of docks and their ancillary industries. As far as the impact of industries on the coast was concerned in South Wales, outside the actual operations of the ports and the adjacent towns, little damage had been done when compared with similar areas in the North of England.

On one part of the Flintshire coast of North Wales heavy industry inflicted many scars in the past. The most serious industrial threat to existing amenities however, was the quarrying operations on certain parts of the North and West Wales coast. The effects of these operations on Penmaenmawr had often been deplored and the contour and scale of that bold promontory had been spoilt. Another instance was the damage caused by quarrying on Yr Eifl headland in the Lleyn Peninsular, and there were similar threats to be observed on the Pembrokeshire coast. "It is surely wrong under any system of national responsibility," said the speaker, "to permit commercial interests to continue in a policy that results in devastating some of the finest natural (and in some instances archæological) features of our scenery. The same influences are at work in some of our inland beauty spots, and in the public interest much bolder measures will have to be taken to deal effectively with this difficult problem. It may be that payment of some compensation, from what we hope will be a national fund under new legislation, will be unavoidable. It is obviously inequitable to expect the Local Planning Authority to face compensation unaided, when the responsibility is a national one."

(2) The Smaller Seaports.

In a previous age those ports had a busy life in coastal shipping, the building of vessels and trades associated therewith. There were many of those pleasant havens in Wales that had interests in themselves: and one would like to see something more positive being done to revive the activities of harbours, fisheries and clean industry, apart from their position as summer resorts. Instances that occurred to one were Fishguard, Cardigan, New Quay, Aberayron, Aberystwyth, Aberdovey, Portmadoc, Caernarvon, Conway and Amlwch. Holyhead was in rather a different category, as the railway terminus for the cross channel traffic to Ireland. It was not an attractive town but had fine coastal scenery close to it. Fishguard Harbour also served the Irish traffic, and attention was being paid in the local planning scheme to improving that end of the town as well as old Fishguard, which had a very picturesque setting and good scenic surroundings. Pembroke Dock's problems were the cause of much local concern as to the future of that well-situated port, in which one of H.M. dockyards was established until about 20 years ago. The town of Milford Haven enjoyed prosperity as one of the centres of the trawler-fishing trade, and there was every likelihood of other industries settling in the locality.

(3) The Holiday Towns.

The best-known are Llandudno, Colwyn Bay, and Rhos, Rhyl and Prestatyn, Pwllheli and Barmouth.

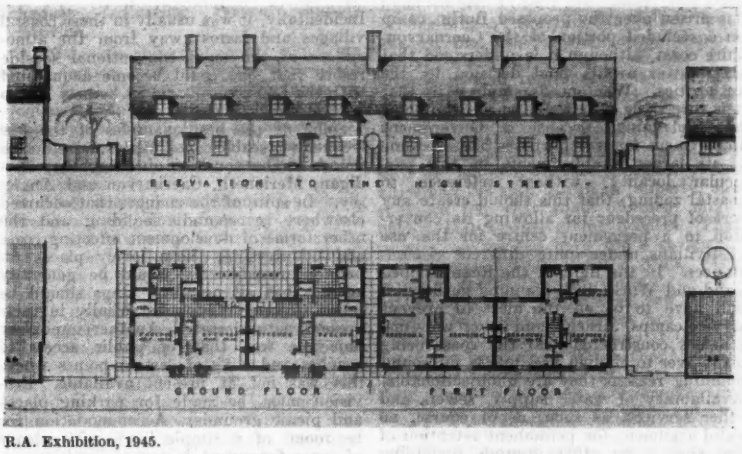
Although fortunate, indeed, in their natural surroundings, most of those towns left much to be desire in the matter of site planning and modern buildings. There was too much raucous pressed brick and sombre cement, in dull streets of conventional pattern. There was plenty of scope for improvement in general brightening up and creating more dignity along the sea fronts. One difficulty had always been much in evidence, the L.M.S. main line to Holyhead, which ran close to the sea and so restricted the opportunity for more spacious layout bordering the foreshore. In between those urban growths there was the usual array of sporadic dwellings and untidy settlements for permanent or summer occupation. In order to safeguard the beauty of the open stretches of the North Wales coast, stringent methods in planning control would have to be taken in anticipation of the spate of post-war building.

(4) Other Coastal Towns and Villages.

There was plenty of variety of these in the Principality, and to people who were not attracted to the more sophisticated resorts, they gave opportunity for exploration of good inland scenery, additional to boating, bathing, fishing and rambling along the coast. Aside from the relatively few areas on the Welsh coast defaced by industry, there were the familiar blots arising from bad siting and design of dwellings, including here and there some nasty collections of shacks and flimsy bungalows. With the increasing popularity of the seaside, bearing in mind particularly the accelerated demands for accommodation likely to arise from "Holidays with Pay," the unspoilt villages and the open coast in between, especially the sandy beaches, were probably the most vulnerable spots. In our planning schemes great discretion would be needed in the zoning provisions for the coastal towns and villages to allow adequate room for such needs as could be foreseen within a reasonable period, and then to prohibit any general development beyond that limit. If we were to check effectively the loose, untidy excrescences that had defaced so much of our seaboard, we must be firm and definite in our planning.

The whole question of holiday camps was one for close investigation; there seemed little doubt that the call for them after the war would be greatly increased. In some localities sites for these camps could be found that satisfied reasonable zoning requirements, for instance, the large new holiday camp outside Prestatyn, near Rhyl, well-planned for its purpose on a spacious site just prior to the war. On the other hand, it would be a most regrettable policy to permit their erection in quieter, unfrequented localities that should be kept free from commercial intrusion.

"Some reference," said Mr. Lloyd, "should be made to the controversy that



R.A. Exhibition, 1945.

DESIGN FOR COTTAGES AT WEST WYCOMBE FOR THE NATIONAL TRUST.

BY EDWARD BANKS, A.I.A.A.

has arisen over the proposed Butlin camp on a secluded portion of the Caernarvonshire coast, although it is understood that the matter awaits final decision by the authorities. What needs emphasis is that it is surely the negation of good neighbourhood planning, because a Government Department for war purposes has sited one of its larger establishments in this particular locality, without reference to coastal zoning, that this should create any sort of precedent for allowing its conversion to a permanent centre for the use of civilians under quite different circumstances. In the light of the Requisitioned Land and Works Bill, planning authorities will have to be on the alert to prevent service camps, airfields and other war-time schemes constructed near the coast being made over to civilian use, unless for sound planning reasons they are unobjectionable. Availability of water supply, sewers and other services, as such, is, of course, no valid argument for permanent retention of the site, if on other grounds (including coastal amenity) it can be established that these works or buildings should not be continued after the cessation of hostilities."

Many of the castled towns and places of historic interest in Wales were situated on the coast, and they were deserving of detailed study for that aspect in their planning implications aside from others affecting them as holiday centres—Llantwit Major, Kidwelly, Carmarthen, Llanstephan, Laugharne, Manorbier, Pembroke and St. Davids in the South; Harlech Criccieth, Caernarvon and Conway in the North. Each of them had its own interest and historical appeal, to which due weight should be given in planning schemes. Even a small extent of unsympathetic building and of other work, such as major road widenings, could quite spoil their scale and "atmosphere." While provision must be made for prospective development in and around them, that must be done with discrimination, and, in particular, the design and material of new buildings had to be carefully watched. "Here, of course, I am making no plea for the retention of old structures merely because of their age," said Mr. Lloyd, "indeed, it is evident that for cottages and similar buildings there may have to be radical reconditioning, and in many cases rebuilding on more modern lines. What I am trying to stress is the need for 'good manners' and that we should not countenance reconstruction and new buildings that would be out of harmony with prevailing local character." If new villages and seaside settlements were intelligently sited and designed in a modern idiom, there was no reason why they should not fit happily into the Welsh landscape. Where road improvements were concerned, it was usually more economical to bypass these old towns than to attempt the widening of closely-built narrow streets, when such happened to form part of the main highway. An admirable holiday village of unusual charm was Port Meirion, which lay in a lovely situation on a small peninsular in Tremadoc Bay, North Wales. It was a fine example of what could be done by landowner and architect (in this instance the same person, which explained much!) in creating a synthesis between nature and art; it had demonstrated to those who cared about the amenities of the coast that modern development need not mean disfiguring them.

(5) The Remoter Parts of the Coast.

Reference had already been made to the high scenic qualities of many stretches of the Welsh coast, which might not be well known in the guidebook sense but were of perennial interest to the rambler, the nature-lover and those who took pleasure in exploring country off the beaten track. Incidentally, it was usually in those coastal villages and farms away from the atmosphere of the more conventional seaside resort that one could become acquainted with the real Cymru, and its homely Welsh way of life.

Some of the best examples of the less frequented seaboard of Wales were to be found in the counties of Pembroke, Cardigan, Merioneth, Caernarvon and Anglesey. In spite of the changes that occurred elsewhere by sporadic building and the other forms of development affecting coast and countryside, those lovely places remained unspoilt. It would be generally agreed that all necessary steps should be taken to keep them substantially in their present natural state. Another important objective was that of public access to beaches and cliffs at certain points where this was not at present available. Provision must be made for parking places and picnic grounds. Accommodation for tea-rooms of a simple kind, with plenty of space for out-of-door meals and sitting-out, could usually be obtained at nearby cottages and farms. All reasonable requirements could be met if care were taken not to detract from local amenities. In regard to motor access, it was surely not too much to expect that visitors should leave their cars at some suitable place a little inland and then proceed to the seaside on foot. To widen the narrow lanes and paths leading to the coast for the convenience of motorists during the summer months would result in destroying one of the characteristics of these out-of-the-way neghbourhoods. Discretion was also required in the siting of such popular forms of seaside accommodation as youth hostels the camping grounds.

(6) Pembrokeshire Planning Scheme.

Pembrokeshire comprised 393,000acres and a normal population of about 90,000, the penny rate producing only a little more than £1,000. The scheme had been undertaken by a Joint (Executive) Planning Committee, consisting of representatives of all the constituent authorities and the County Council. The preparation of an agreed planning scheme, the cost of which was being borne by the County Council, was delegated to the Joint Committee by each local authority, interim development powers being retained by the latter. There were only a few towns, none having a population exceeding 12,000, and the Pembrokeshire coast was one of the most beautiful and varied in Britain. The county had been designated as one in which a National Coastal Park might well be established, and that had been prominently in the minds of the Planning Committee, who were hopeful that means would be found now to establish a National Reserve of this description embracing the whole of the Pembrokeshire seaboard. When the zoning proposals for some of the "key" areas were being drafted the authors of the scheme were fortunate in being able to secure the active co-operation of the National Trust. For the protection of one especially fine sector of the coast between Solva Harbour and St. David's Head, financial assistance was forthcoming from the Trust's public appeal; by acquisition of certain lands along the cliffs and beaches and by agreements under covenants with landowners, covering a more extensive adjacent area, nearly 5,000 acres had now been permanently reserved from any land use other than agriculture or kindred purposes. The small city of St. Davids, with its famed cathedral and historic site and buildings just inland from the coast formed part of this preservation scheme and special measures had been taken to prevent the environs of St. David's from being sacrificed to careless development. In this and other coastal areas, maintenance of public rights of way and the old coastguard paths was a special responsibility. Some local authorities in the country had been active in establishing records of coastal paths, and the Planning Committee were doing all they could to retain and extend them. It was in matters of this kind that a National Parks Authority, with adequate funds at its dispcsal, could relieve the Local Council of a responsibility that should not be confined to a particular locality. Except where existing towns and villages precluded, it was the intention to reserve a wide strip of open land all along the coast. Some of it, where the towns and holiday resorts were, was intended for public acquisition. Other parts were zoned as private open space by agreement with owners, ensuring right of way at specified points. Full use was being made of "coastal" and "seaside" zones in the planning of this county, to avoid a repetition of the damage done in some districts by uncontrolled development near the coast before the Joint Scheme came into being. The aim would be to preclude new building nearer to the sea than a prescribed distance, except in a few places where grouped development adjoining existing villages would be allowed.

Care had been taken in investigating sites for Local Authorities' housing so that those were fitted into the pattern for the present villages, or in a few cases would form small new communities. Similarly, in zoning for other types of residential development, the aim had been to have this in tidy settlements and to check sporadic growths. In many places by the sea there was a continuing demand for camping sites and bungalows of temporary construction for holiday use. One problem was to avoid erection of cheap wooden huts and similar "eyesores" during an interim period on plots where it was proposed tc build permanent dwellings after the war. To cater for the demand for summer huts and prefabricated bungalows, the Planning Committee's policy was to permit these only on plots selected for their suitability, where the siting would not detract from natural surroundings. A series of standard plans would be available for those wishing to put up dwellings of that description. A further suggestion had been made that the Local Authority should require a site within the prescribed zone, lay the requisite drainage and other services, and itself erect the bungalows on an orderly lay-out. These could be let during the summer months on remunerative terms and the Authority could control the tenancies and upkeep of the property.

Much more use should be made of colour-washing for brightening the appearance of old and new buildings along the coast That method was invariably employed in the typical old farmhouses and cottages of the county. The best location for car-parks near the coastal hamlets and bathing beaches required consideration. In Pembrokeshire it was often difficult to find suitable spots at a reasonable distance from the shore, because of physical configuration. The County Council had an extensive programme for roads improvements, by-passes and similar schemes for traffic amelioration. It was quite evident that much would have to be done in this way for the safety and convenience of motorists and the public. All such projects should, however, be carefully scrutinised and co-ordinated in the planning scheme. They should be largely confined to the main highways and connecting roads, so as to avoid indiscriminate widening of those winding lanes and bye-ways, with their hedgegrows or high banks, which were so characteristic of the county.

BUILDING MATERIALS AND COMPONENTS

THE SUPPLY POSITION.

In conjunction with the other Government Departments concerned, the Ministry of Works has recently made a review of the supply position of materials and components normally used in housing and other building work. As a result of this review the materials and components fall under one of three categories, which are as follows :—

A. Materials and components which are in production and of which there are stocks in the hands of manufacturers or producers.

B. Materials and components for which there is adequate manufacturing capacity, labour and materials immediately available to meet all probable demands, including orders for stock.

C. The supply of materials and components in this category is normally sufficient to meet the present immediate demands, but there is no surplus which can be used to build up stocks in the hands of manufacturers, merchants or consumers.

A list of the materials and components divided under the above three categories will be found below.

CATEGORIES A AND B.—As regards materials and components falling within categories A and B, it is the desire of the Government that local authorities, builders, contractors, builders' merchants and other stockists engaged in the building trade should (wherever practicable and where the nature of the commodity makes it suitable for the purpose) place orders now in order to meet their future requirements or for the purpose of increasing their existing stocks to a level which will allow a safe margin for contingencies.

The objects which it is desired to attain by this procedure are as follows :—

(i) Many manufacturers have been engaged wholly or largely on war production in recent years. Orders placed now will assist them to overcome the difficult transition period by enabling them to put their factories to work on known demands.

(ii) A good distribution of materials and components will be ready to meet the rebuilding programme as it gathers momentum during the next few months.

(iii) There will be stocks in the hands of merchants and consumers to meet temporary shortages which may arise until such time as full peace-time conditions prevail.

CATEGORY C.—As regards the items in category C, it is requested that all persons or firms who are engaged in the building trade should not place orders nor carry stocks except to the extent which is necessary to meet their present immediate requirements. In the industries concerned there is normally an adequate supply of raw materials and sufficient production capacity available, but production is restricted owing to the shortage of manufacturing labour. It is anticipated that within the next few months sufficient labour will become available, either by release from the Services or by diversion from war production which is no longer required, to enable manufacturers to meet all demands under the building programme. Until that occurs the Government invites the co-operation of builders' merchants and consumers in restricting their demands to the minimum necessary to meet their immediate requirements.

The Ministry of Works will publish amendments to the list as the supply position changes.

Schedule Indicating Present Supply Position.

A. Materials and components which are in production and of which there are stocks in the hands of manufacturers or producers : asphalt (mastic); bricks (common); clay blocks (hollow) (in South-East, East Midlands and Lancashire only); concrete roofing tiles; fireclay products; salt-glazed pipes.

B. Materials and components for which there is adequate manufacturing capacity, labour and materials immediately available to meet all probable demands, including orders for stock : barrel bolts; casement fittings; ceiling roses; ceiling blocks; cement; chalk lime; coal bins; cold water cisterns; concrete products (other than roofing tiles) and artificial stone; conduit switches and boxes; copper sheet; copper tube; fires, electric; foamed slag; glazed tiles (for walls); hat and coat hooks; hinges; hot-water cylinders; immersion heaters; lampholders; lavatory seats (bakelite); plugs (electric); putty; sand and gravel; sanitary earthenware; sinks (metal); sockets (electric); steel (other than steel sheets); switches; switch fuses; taps, stopcocks, ball valves and waste fittings; thermostats; wash boilers (electric); wash boilers (gas); water heaters (electric); water waste preventors (plastic); whiting; windows (metal) and metal doors.

C. The supply of materials and components in this category is normally sufficient to meet the present immediate demands, but there is no surplus which can be used to build up stocks in the hands of manufacturers, merchants or consumers : asbestos cement; bricks (facing); cast-iron pipes; composition floor blocks; conduit; cookers (electric); cookers (gas); fires (gas); glass; glazed tiles (for fireplaces); glazing bars; hardboard and insulation board; iron castings; lead sheet and pipe; locks and latches; meters (electric); meters (gas); paint; plaster (hard); plasterboard; roofing felt; slag wool; slates; solid fuel heating and cooking equipment; steel sheets; steel tubes; tiles (*a*) clay roofing, (*b*) flooring; timber; wallpaper (not in production due to shortage of paper); water heaters (gas); water waste preventors (metal); wood wool slab.

THE £10 BUILDING LIMIT

REVIEW WITHIN THREE MONTHS.

THE £10 limit on repairs, which comes into operation on August 1, is to be reviewed by the Minister of Works before the end of October. Mr. G. W. Buchanan, President of the National Federation of Building Trades Employers, made this announcement at a meeting of the London Master Builders' Association's Central Area, No. 5, at Putney, on June 5. Major G. P. Parker, Chairman of the Area, presided.

It had been suggested in some quarters, said Mr. Buchanan, that the new scheme was one which would put many small builders out of work, and which was weighted in favour of the big builder. He did not agree. The National Federation had discussed this most important question very fully with Mr. Duncan Sandys and had found him fully alive to all the dangers. Throughout the discussions the National Federation representatives had the interests of the small builders very much in mind.

"We were faced at one time," continued the President, "with the proposal to extend the present £10 limit to the rest of the country, leaving London just where it is. As it is, we have got London relaxations—small, it is true. But are they not worth while? We should have liked to see a limit not lower than £20 or one-fifth of the rateable value, but I suggest that the present scheme is much nearer what we wanted than the £10. Otherwise your representatives would not have agreed to co-operate with the Ministry of Works in working the scheme.

"We told the Minister that we regarded the scheme as experimental; we said we doubted whether the local authorities had the staff to run in properly, and that we felt that some of them might have a bias against giving licences. That is why we pressed hard for a review in not more than three months' time. The Minister acceded to our request.

"Some critics think that few or no licences will be given. They are wrong. The local authority's job—and if they do not do it properly it is for the Minister of Works whose agents they are to put them right—is to issue sufficient licences to ensure that every builder and his workers have enough work.

"The licensing scheme has only one object—to ensure that the builders and the labour will build some new houses and not all be engaged on some other work. We did not feel that we could oppose such a scheme and take the risk of holding up new housing. We did feel that despite considerable doubt we could give the scheme a three months' trial."

New House Building.

On the question of new housing, continued Mr. Buchanan, we must all guard against making promises which could not be fulfilled. This was a temptation which politicians always found it hard to resist at election time. We must help them to resist it, because if promises were made which were not carried out the builders, though quite innocent, were certain to get the backwash.

"I saw it suggested in a well-known Sunday paper recently that the Government should fix a target. They have done so. It is 100,000 permanent houses built or building at the end of the first year after the war with Germany and an additional 200,000 by the end of the second year. In addition there is a programme of somewhere between 100,000 and 200,000 temporary houses. Even if the labour forecasts turn out to be right, it seems to me that all concerned will be hard put to it to reach the target. If the war with Japan should end quickly and additional labour become available during next year, then we should pass the target, but not by a big margin. There are many other essential jobs besides new houses for us builders. Figures of 500,000, 750,000, and even 1,000,000 houses in two years are being mentioned. Those who talk in these terms, I suggest, deliberately mislead the people on a vital matter. And I should not like to be in their shoes when the day of reckoning comes."

"Let me refer briefly to the repair of war damage. On this I feel strongly that the time has come when the Special Repair Service should be disbanded and the men allowed—as with Class A men—to return to their employers. Unless this service is disbanded we shall have to inquire closely into the cost of running it—what are the overheads—and into its efficiency as compared with that of mere builders. We all want to speed up the day when we can take on our own men, and when we can discharge unsatisfactory men, not at a moment's notice, on the old 'hire and fire' system, but under the new weekly agreement which we have negotiated with the operatives. And we all want at the earliest possible date to get away from cost-plus.

PLANT IN THE BUILDING INDUSTRY

MR. WYNNE-EDWARDS'S UNIVERSITY EXTENSION LECTURE.

THE second of the series of five University Extension Lectures arranged by the University of London was given on June 7 by MR. R. M. WYNNE-EDWARDS (Director of Labour Requirements and Plant, M.O.W.). Following is the full text of the lecture :—

Introduction.

A few weeks ago I gave a lecture on the subject of building plant to the Architectural Science Board of the R.I.B.A. Some of what I said then I am going to say to-night because it seems to me that it is important in these times of great development that as many people as possible should have the right perspective of the relationship between plant and building. If any of you were present at that lecture you must forgive me if you have heard some of it before.

In talking to you about plant I do not propose to talk only about plant which is in common use to-day nor bore you with lengthy descriptions of this or that type, but I propose instead to consider plant more from the point of view of the way in which it is related to the process of building, and to try to show how much building depends upon plant and how it has been affected by the plant available.

Building depends on several factors, of which perhaps the three chief are materials, means of putting these materials together to form a structure, and a suitable design to permit the materials to be used. Each of these three factors is greatly influenced by the other two. Now two of these processes are closely linked with plant, for the making of the materials themselves depends on plant, and so does the assembling of them to form the structure. In consequence, we cannot really make any hard and fast division between the plant which does the one and the plant which does the other, for what is done off the job in one case may be done on it in another. For example, suppose we decide to build with reinforced concrete. If we plan to bring our cement and aggregates to the job, set up our concrete mixers, our hoists and barrow runs and pour the concrete in place between shutters, we require one kind of collection of plant on the job. But we may equally well choose to build our structure with pre-cast components, in which case the equipment we shall require on the job will be quite different, because many of the processes will have been done before the materials arrive on the site at all. In considering plant, therefore, we shall never see it in its right perspective nor its true relation to building unless we let our mind range from the hand tools—the trowels and chisels—right through to the material-making tools like brick moulds and the grinding mills that make cement—and think of it all as building plant. For that is what it is.

First of all, then, let us see how necessary plant is to the processes of building and to what extent it forms essential equipment without which we cannot build at all. To do this we must explore back into early times and get a picture of the development of building from the time when man first started to build, as we understand building, some five or six thousand years ago.

Early Tools.

Between 4,000 and 3,000 B.C. the men living in the valley of the Euphrates and the Tigris made a number of epoch-making discoveries which changed the whole social and economic structure of the human race. They discovered how to plough and irrigate the land and how to harness the ox. They discovered, too, how to make copper and bronze tools which were better and more easily made than bone or flint ones. But perhaps the most interesting discovery from the point of view of building was a new kind of building plant—moulds in which clay could be dried by the sun or by baking into bricks. Before that time man was only able to build himself shelters of reeds and branches on which he daubed clay and let it dry in the sun. But once he had discovered how to make bricks of equal size with flat sides so that they could be piled one on top of the other he was able to start building on entirely different lines. He no longer had to live in hovels or holes in the ground. Proper houses could be built with walls of bricks jointed with bitumen strong enough to carry timbers to span the roof, and new bronze tools were invented for working wood. People began to live in towns and soon man was building besides houses granaries in which to store his crops and workshops to house craftsmen and artizens as they worked at their trades; civilisation had begun. During the next thousand years or so, in another valley, the Egyptians discovered a new building material—stone. In the Nile Valley timber was scarce and there was a need for something to take its place. Stone was handy in the surrounding hills, and so man discovered how to quarry rock and he invented new bronze tools to shape it. Consequently he was able to make his beams out of stone and stone bricks, too, of much larger dimensions than could be made out of clay, the only limits to their size being what he could transport and put in place with levers and inclined planes and the motive power he was able to muster.

Armed with this equipment for making building materials, man soon learned the art of building, and within a few hundred years had so improved his technique that he was able to design and build temples and palaces of great size and beauty, decorating them with bronze and paint—the Hanging Gardens of Babylon, for example, which were really a terraced tower of bricks; the Pyramids and temples of Egypt—immensely solid and heavy in construction as you would expect when you think of the simple equipment they had to erect them and remember also that they had no way of measuring the strength of their materials nor the stresses and strains set up except by trial and error.

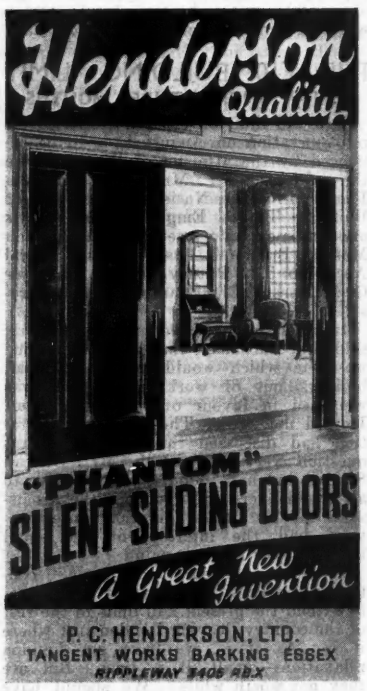
Gradually the art of building and craftsmanship in the use of building plant spread out from the Middle East over Europe and North Africa, men using timber, stone or brick, depending on which was most easily procurable. As the technique of building improved houses became cheaper, and we find that by the seventh century B.C. a rich Babylonian merchant could afford to build a two-storied house which covered 100 ft. by 80 ft. and included a bathroom. Craftsmen, too, lived in houses; archeologists have found the foundations of many of these small houses, which were usually built in rows back to back. However, houses were still relatively expensive, and the majority of the population still lived in very simple shacks.

The next important advance in building plant came with the discovery of iron. We do not know exactly when that happened, but we do know that during the last millennium B.C. iron tools came into general use. They were, of course, to a great extent copies of bronze tools, but the important thing is that iron tools were not only better than bronze tools but they were very much cheaper. Now this had two effects. Firstly, it made it easier to shape timber or stone, and therefore quicker, and, secondly, the relative cheapness of iron tools meant that instead of being procurable only by the rich many more people were able to buy them. The result was that more buildings could be built because building became cheaper.

So you see 2,000 years ago and more man knew how to make and use all the common building materials, bricks, stone and timber, and for most of that long period of time since then he has gone on making these materials in the same way and putting them together with the same sort of equipment, experimenting with new styles and shapes of buildings and learning to build beautifully with what he had, but adding very little in the way of new processes, new tools, or new materials. In fact, we must jump all the way to modern times before we find something radically new emerging—to the growth of modern science and man's great discovery of how to produce cheap power in unlimited quantities—new learning of importance to mankind equal to those discoveries of our predecessors in Mesopotamia 5,000 years ago, and no doubt with equally far-reaching consequences, of which we are only seeking the beginnings.

Development of Steel and Concrete.

The scientific discoveries of the last 300 years have revolutionised the whole of industry and have already had a marked effect on building. We have learned how to make several new materials, and we have learned how to use them. Perhaps the two most important are steel and concrete, both involving completely new processes in building. By discovering how to make and grind cement finely and accurately and then how to mix it quickly with sand and gravel and water, we have learned how to produce stone anywhere we like in a building and in any shape we please, more cheaply than by using natural stone out of the ground. Furthermore, because steel and concrete happen to have about the same coefficient of expansion, we can reinforce our concrete with steel, not only to make it much stronger, but also to simplify greatly that difficult problem in building—the making of strong enough joints between the various structural members to carry the load from one into another. Steel, too, by itself has added to our scope in building. Like concrete it is cheap and strong; we can roll it by machinery in any shape we like, and it lends itself to making adequate joints by riveting or welding. So steel and con-



crete, which are the result of chemistry and plant invented specially to make them, and more plant invented specially to assemble them together to form a structure, are a considerable addition to our knowledge of how to build. There is another interesting point about them that I want you to notice, and that is that their use has necessitated new kinds of design. A well-designed reinforced concrete building does not look the same as a brick building or a stone building. So new materials made by new kinds of plant require new shapes to our buildings.

The machine is coming more and more into use for making new building materials. Bricks and various kinds of roofing materials are almost entirely made by machine. Inside the building there are all sorts of new materials; cheap and well-made glass, synthetic stone, plywoods, various kinds of wall boarding, glass wool for insulating, plastics of various kinds, mastic floorings, to name a few; all made by machine.

On the actual construction side several new processes have resulted from the discovery of the machine. Efficient methods of pumping and the use of compressed air are two important ones, particularly with regard to foundations. Water in the ground has always been a difficulty, and sometimes an insuperable barrier to making foundations. The modern pump allows us to solve this problem; in fact, the latest refinement which can be used when the ground is porous permits us, by driving a ring of pipes into the ground all round the site and using them as wells, to pump all the water out of the ground before we start to dig, and so do the excavation in the dry. Compressed air helps us in deeper foundations, particularly in clayey kinds of ground where we can do the excavation by using a closed box or caisson into which we pump compressed air until the pressure inside the box is high enough to prevent the ground squeezing in.

I have already referred to the welding of steel. We do not know yet how far the development of such techniques as this may take us, but to be able to join two pieces of material together with a piece of themselves, so to speak, so that complete continuity of material results, is clearly an important advance in construction.

Another interesting thing about the machine is that frequently it enables us to turn out a better product than is possible by hand. For example, concrete proportioned mechanically and mixed in a mechanical mixer is better than it is possible to make by hand, and if we go further and after placing it in the shutters vibrate it with mechanical vibrators, we can consolidate it better, and therefore produce a stronger and more durable product than we can by ramming it manually.

Plant for Testing Materials.

So much for the relationship between the processes of building and building plant; I think I have said enough to show you how much building depends upon the plant available. I have shown you, too, something of the great changes that are occurring in these processes due to modern machinery. But there is another extremely important development which has occurred in building in the last hundred years, and it is in our ability to find out the strength of the materials we use. Up till comparatively recently man could only build by trial and error; if his building stood up, all was well; if it fell down, he had to start again; he had no way of knowing beforehand what was likely to happen. Nowadays we are rapidly removing this handicap by inventing machines with which we can determine the nature and strength of the materials we propose to use before we use them.

We are accustomed to take familiar things very much for granted, and I expect few people think of these scientific machines at all, let alone realise what important building plant they are and how much the present and future of building depends on them. For once we can predict the way our materials will behave when they become part of a structure and have to carry loads we can begin to design our building scientifically and economically and make each part strong enough to do its job without wasting material in unnecessary thickness. The machines that do this testing are of very great variety, mechanical and electrical, simple and complex. The great majority are used either in manufacturers' or in other testing laboratories, but some no doubt you have seen on the job—the slump cone for testing the slump of concrete, for example, which tells whether the mixture is of the designed consistency.

Perhaps the most interesting and certainly the most recent developments in plant for testing are the appliances by which we can measure the strength and predict the behaviour of the ground after the building is erected on it. Largely for agricultural reasons the great civilisations of the world have grown up in countries where the ground is of a clayey nature. In consequence, the foundations of buildings have always been a very serious problem. Until recently, very little has been known about how foundations ought to be constructed; for unless the foundations of a building are so made that the weight of the building is properly distributed over the ground all sorts of unexpected things are liable to happen. You can appreciate the problem more easily if you think of a structure not as resting on something solid but as floating on a dense and very viscous liquid. That is the literal truth in a very great number of cases and you can see at once that unless the loads come evenly into the ground the heavier parts will tend to squeeze out the underlying ground faster than the rest and uneven settlements will occur. This does not matter so much where the building is light—such as a house, though you must have seen even in houses cracks developing in the plaster due to this cause—but it matters very much in big heavy buildings where it may be so serious as to cause the collapse of part of the structure. Few buildings are built on rock and even rock deflects to a considerable extent if the load is heavy enough. I know of a high dam in Morocco built on solid rock when the rock actually settled over 6 in. under the centre of the dam while it was being built. You can imagine what stresses would have been set up in that dam if so large a settlement had not be expected and allowed for.

In order to predict the behaviour of the ground under the foundations machines have been invented to bore into the ground and bring up samples in their natural state which can be put into other appliances which measure the strength of the sample. From this information we can get an idea of what the ground will do under the load of the building and therefore how the foundations should be designed. It may interest you to know that before the new Waterloo Bridge was built samples were taken of the London clay which would have to carry the load of the piers and from the result of the tests the bridge was designed with the prediction of a definite amount of settlement which proved very close to the actual settlement that occurred.

Plant and Manual Work.

So far, we have considered plant from the point of view of producing and testing materials with which we can build and of assembling these materials together to form a structure. But there is another side to building plant altogether and that is the extent to which it saves manual work. It is not sufficient to have the technical knowledge to build a structure. The community must also be able to afford to build that structure; that is to say, it must not take too many man-hours of work. To understand this we must move for a little into the realms of economics and look at building from quite a different angle. The wealth of a community, and therefore its standard of living, depends upon the amount that it is able to produce per man-hour of work. Its efforts must, of course, be spread over a number of items, the production of food, for example, or clothes occupies a considerable part of its activities. Ancient man was almost entirely occupied in getting these essential things, and in consequence he was compelled to build as simply as possible so that he could spend his man-hours elsewhere. Gradually, as he learned the principles of agriculture and invented more efficient tools to do his work he could afford to spend less time on getting food and consequently more on other important things, such as houses. But he did not stop there. Soon he discovered that by using his new processes he could build much bigger structures than were required for him to live and work in, and before long he aspired to building something really big. The Pyramids on the Nile are a good example of the result of such aspirations. But here his aspirations came unstuck. Tradition says that it took 100,000 men 20 years to build the Great Pyramid, so you can well appreciate why man very soon stopped building Pyramids; his economy could not stand it, it took too many man-hours. For whether the labour was paid or not, it still had to be fed by the rest of the community or it was incapable of doing any work at all and the productivity of the rest of the community was not sufficient to support so large an army of men. In other words, the Bronze age plant which was adequate for the building processes required for making Pyramids was inadequate in saving man-hours of labour to bring the labour costs down to an economic level.

The Pyramids were built a very long time ago, and as we examine the history of building from those early days we see the slow but steady increase in man's productivity per man-hour of work reflected in two ways. As he became more efficient in producing food, clothing and

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other essentials a community could afford to support more building craftsmen, and as the craftsman's tools improved he himself could produce buildings quicker. In consequence, the community's capacity for building grew, and the result has been a steady increase in the number of buildings a community could afford.

But throughout these many centuries man was primarily dependent on what he could do with his own strength. He learned to harness oxen and much later, horses, to help him, but in most things connected with building he was limited in output to what his unaided strength permitted. It was not until James Watt invented the steam engine and there followed the development of mechanical and electrical sources of power during the last two centuries that the picture changed. And what a change. Power to haul, power to lift, power to drive machines of all kinds, power to save man's labour. For do not forget that when one speaks of machines being labour-saving it means exactly that—the saving of laborious work, hard work, drudgery.

Assessment of Labour-Saving Devices.

Let us look for a minute or two on some of the uses we have made of this labour-saving power and what advances we have made in labour-saving generally. To start with, we do nearly all our digging by machine—you are all familiar with excavators and bulldozers and similar plant. Secondly, we carry our materials about quickly and cheaply—by railway, steamer or lorry. On the job we have a variety of labour-saving devices for handling materials—hoists for lifting materials up, mobile cranes, derrick cranes for heavy loads, high lifts or long outreach, derricks which will themselves climb up the steel structure as they erect it. We may elect to carry our materials on conveyor belts or pump concrete through a pipe after mixing it accurately in a mechanical mixer instead of the laborious method of turning each batch over by hand three times dry and three times wet. Building requires scaffolding, and anyone who has had to erect scaffolding of timber scaffold poles with all the laborious lashings that it entailed will appreciate the economy in man-hours that results from the modern light steel scaffolding that can be so quickly erected or dismantled.

Consider, too, the many powered tools that are now available for use in building, all of them designed to save manual effort. Concrete breakers or clay spades for digging hard ground; rammers for compacting back-filling in trenches, saw benches, powered hand-saws and wood-working machines generally, lathes, saws for cutting pipe, caulking tools, powered hammers, drills, screw drivers, polishing machines of various kinds, sanding machines, paint sprayers, to name a few. Some are operated by compressed air which can be supplied from a mobile compressor, others by small petrol engines, but the most common source of power is the electric motor, which allows the tools to be run straight off the mains or by current from a small portable generator if the main supply is not yet available.

The picture that I have drawn of our present-day equipment is far from comprehensive, but I think it ought to be enough to show what tremendous developments have occurred in the past 200 years, most of them far more recent than that. We have invented a large number of new tools and as a result we have developed many new processes. We have harnessed power and made it cheap and easily procurable. What are we going to do about it? The first and most obvious thing is that we must take trouble to learn to use the tools we have got. We must think in terms of our plant, we must become plant-minded. We must realise that it is neither the machine nor the man alone who do the work but both together, the man directing the machine and dependent upon its output and at the same time the efficiency of the machine dependent upon the skill of the direction.

Need for Skilled Management.

Many people still think only in terms of labour output, reckoning the machine as a useful adjunct but nothing more; but thinking in that way will never get us a true understanding of the use of the machine. We must learn to think in terms of labour-plus machine output. Machine-hours of work are as important as man-hours of work, and everyone concerned with the management of a job, the builder, the building superintendent and the foreman must understand this and be just as concerned with the machine working time and idle time as they are with labour's time. Every job has time-keepers on it keeping labour's time, but I have rarely heard of a job where there is a time-keeper keeping the working time of the machines. And yet, not only does the machine do the work of several men but, when it breaks down or ceases to deliver its anticipated output, in addition to stopping work itself it prevents the labour around it from working.

Take for example the very simplest case of a concrete gang working an eight-hour day. If the concrete mixer starts half an hour late or breaks down for half an hour, the cost of the work that the gang and machine are doing will increase by 6½ per cent. over that day; not because the men worked less efficiently but because the combination of men plus machine worked less efficiently.

Let us consider such a concrete gang a little further, because it is something with which you are all familiar and it provides an example of how a foreman might think in terms of his machines. First of all, a concrete-mixer is designed to turn out, hour after hour, concrete of the same quality provided that care is taken in proper proportioning. We have already seen that if we are going to build efficiently it is important that our materials are of the strength called for in the specification, because the specification describes the quality on which the design is based, so the first job of the foreman is to see that care is taken to turn out every batch of the same quality and he must assist the mixer driver in seeing that this is done. But at the same time he must watch his output and see that his machine actually turns out as much concrete as it is capable of doing, otherwise he isn't making full use of it. This means that he must keep his eye on the supply of cement and aggregate to ensure that the machine is not held up waiting for materials. Another thing to watch is the position of the mixer itself, for if its output is to be maintained with the minimum expenditure of labour effort it must be suitably placed both with regard to the piles of aggregate and cement and also to the spot where the concrete is being deposited, particularly if barrows are being used. Often as the work proceeds the point where the concrete is being deposited gets further and further away from the mixer, and then the foreman must decide at what point it will become more economical to stop the work and move the mixer, which means, of course, that he will have to arrange ahead of time for his piles of aggregate and cement to be ready at the new spot as soon as the mixer is moved.

Need for Skilled Operators.

One could think of many such examples to show how a foreman can learn to use his plant efficiently, but no foreman can manage his plant unless the operators are themselves skilled. The quality of the concrete depends just as much on the mixer driver as it does on the foreman and the same is true of the operation of any machine. Skill in operation of a machine necessitates taking a lot of trouble in learning the capabilities of the machine and the uses to which it can be put and every good operator ought to have as well a working knowledge of the mechanisation itself. For he must thoroughly appreciate that if a machine is going to work efficiently it must be looked after and he must see to it that whatever day-to-day servicing is required is conscientiously done. By skilled use of the machine he can save much time and cost by keeping up a hight output, and by carefully looking after the machine he can save many unnecessary breakdowns with the attendant cost of repair and loss of output.

This brings us to the subject of maintenance of plant generally, a most important matter. Maintenance falls into two categories, day-to-day servicing whilst the plant is in operation and overhauls when the machine is thoroughly reconditioned by replacing parts which are so worn that they are liable to break and cause the machine to stop work. Manufacturers of plant of all kinds issue carefully thought out instructions about how to look after their machines, and it is very well worth while taking definite steps to see that their instructions are carefully followed. The important thing to remember all the time is that a machine must not break down, because besides loss of output the disorganisation resulting from breakdowns is invariably wasteful, inefficient and expensive.

So you see that there is a great deal to be learned by all of us in the proper understanding of the use of the machines we have. The architect who designs must plan his building so that as much of it as possible can be built with the use of plant. The builder who builds must plan his work so as to use his machines as efficiently as possible; his foreman and operatives must help in every way to see that his plan is carried out. Each has his part to play and each has much to contribute.

Future of Mechanisation.

I have talked about the tools we have, but what of the future? We cannot stand still. In what direction shall we go next? I think the answer is clearly that we shall proceed towards further mechanisation. No doubt this will apply more to certain types of building than others, but I think it inevitably will have its effect upon building crafts generally. Throughout all industry, the advent of the machine has meant that some crafts have grown less

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and in their place new ones have arisen, and you can no more stop changes of this kind occurring than Canute could stop the tide. At the present time, for example, we are all very much interested in housing. Housing is a very important side of building, but what kind of houses do we want? Do we want houses built in a certain way or do we want the best accommodation that we can provide, with our limited labour force, by harnessing all that science and machines can do for us; for, remember, that it is still true that there is a limit to the number of people that a community can afford to have on building because it must still occupy itself in a great many other forms of production in order that it can live. I do not think there is any doubt about the answer—certainly all wives would agree with me—we want the best accommodation we can get regardless of how it is made.

Each time new tools and processes have been invented man's standard of living has risen, because with them he was able to produce more with a smaller expenditure of man-hours. The result of each development has been not only that houses grew better but they also grew relatively cheaper and more and more people could afford to have them. But the poor people's accommodation has always lagged behind (and remember that the relatively poor have always constituted a very large percentage of the whole community) and the reason is that, so far, building has never been sufficiently inexpensive in man-hours for the community to afford to provide the current standards of comfort for everyone. None the less, that must be our aim.

But it can only be done by exploiting the new tools as much as possible. That is the lesson history teaches. Without the machine, unless labour is plentiful and wages low, the product is too expensive. Conversely, for labour to be plentiful, unemployment must exist, and when wages are low the labourer cannot afford to purchase comfort anyway. In other words, in order to accomplish more in fewer man-hours and so permit the raising of the standard of living for the workers, increased mechanisation is essential. The same is true of building, and failure to make full use of the machine can only be ultimately at the expense of the working man.

Factory or Site Work?

What further use can we make of the machine? We cannot yet answer that question; we do not know enough about its possibilities; we must keep an open mind. Clearly, we must develop the technique of making the most use of machines while the actual building is being erected. But I think we can go further. Buildings are erected in the open where men and materials are handicapped by the weather, where conditions at best are not conducive to great accuracy in workmanship, where machines cannot be expected to work to fine limits. In the factory, on the other hand, conditions of work are much more stable, machines can be designed not only to work with much greater accuracy but also to carry out processes which could not be contemplated in the field. It seems probable therefore that the trend will be towards making more and more of the building in the factory and thus reducing the number of man-hours required on the site where productivity must inevitably be lower. There is a move in this direction already. It has been given the rather meaningless label of prefabrication and is spoken of as if it were something quite new. There is, however, nothing new in the principle involved; it is merely an extension of present practice. For many years nothing has arrived on a building site that has not been prefabricated to some extent beforehand, and it is only commonsense that if there is advantage in doing any of the work in a factory, the maximum amount that can be done there should be. So let us not dismiss prefabrication as a flash in the pan, something forced on us by a peculiar set of circumstances due to the war. I think the chances are that what is now called prefabrication, the making of as much of a building as possible under the most economical conditions, will increase rather than diminish, especially in connection with houses and certain types of factory buildings.

We happen to live in one of the great discovery periods of the human race; we have found the means of producing more with less manual effort than any of our predecessors ever dreamed was possible. But we are still a long way from knowing how to harness these discoveries to our best advantage. This is true also of building, and it is up to each one of us to realise the fact and to play our part in the advancement of human knowledge. We must learn to understand and use the machine of our day just as builders of every age had to learn to use the machine of their day. For machines are only an extension of man's own manual effort, whether they be great grinding mills or a hammer and chisel. Furthermore, it doesn't matter whether they are used by hand or operated by an engine they need looking after just as carefully.

Lastly, we must not be bound too much by what was done in the past. What our forefathers did was the best they could do; it doesn't follow at all that it is the best we can do. In fact, we know that we have the facilities to do better. So let us strike out boldly and not be afraid to try new ideas and new methods.

QUESTION TIME

THE CHAIRMAN, Mr. A. T. Mitcheson (Deputy Extension Registrar for the University of London), invited questions.

The first was with respect to the use of bulldozers in the building industry. —The Lecturer replied that a bulldozer was a tractor with a blade which it pushed, but he took the word as a generic term, and, in that sense, he agreed that bulldozers would be used for site levelling. Thin layers of ground would be scraped off one place and taken somewhere else, the site being rolled out by the same process. The value of such machines depended to a considerable extent on the skill of the operators. The Army had taken an immense amount of trouble getting out booklets describing how the bulldozer could be used to push down a tree, dig a trench and so on.

The next question was with reference to the period which houses should be built to last.—The Lecturer replied that he was not sure our sons and grandsons might not think it proper to build for a limited period, and he believed that in Sweden to-day people built knowing that their work would last only 40 or 50 years. The equipment inside the house mattered, and when it was 40 or 50 years old it was difficult to bring it up to current standards.

In reply to the observations of a member of the audience, he said that he was glad this speaker had mentioned the lay-out of plant. The laying out of the job in terms of the plant one was going to use was tremendously important, and it was a thing lamentably lacking. In a very great number of jobs nobody had thought of it. It was to be hoped that building superintendent, engineer, foreman and everybody would be "plant minded," understanding the capabilities of plant in general and neither working it too hard nor underworking it.

In reply to the next question, Mr. Wynne-Edwards said that air raid damage repair was a particularly difficult job on which to use plant because you had nothing to go at, but were doing bits and pieces all over the place. As to using plant for repairs, the only thing he could think of was a device for taking putty quickly out of window frames; but considering the number of windows with part of the glass left, the putty having to be taken out in every case, this was not really a small thing.

The next question was as to builders being able to acquire plant in quantity and at reasonable prices.—The Lecturer replied that plant had been desperately scarce for civilians, and it would continue scarce so long as the demand existed for the Army and Air Force. The community had only a limited number of man-hours to dispose of, and therefore plant manufacturers could only be allowed a certain amount of labour and capacity. Out of that they turned out the best they could, and this was distributed as fairly as possible with an absolute priority for the Services. When the war was over builders would be able to get all the plant they wanted, and competition would begin to operate.

A question was asked as to builders starting on jobs for the sake of appearances before full planning had been done. —The Lecturer replied that he heartily agreed it was a shocking bad practice for a builder to make an early start for the sake of making a show. If one were to do a job economically and efficiently one must think it out ahead of time—though one need not take six weeks to do this.

A member of the audience said he believed the majority of building workers were employed by small or medium-sized builders, but the lecture seemed to have been directed to civil engineers and large contractors. Could Mr. Wynne-Edwards indicate any type of plant which would help small and medium-sized builders?—The Lecturer said he could think of quite a lot of plant that would help them, but some of it was frowned upon by the people who should use it. For instance, paint spraying equipment was only in its early stages of development, but might become a very useful thing. There were a lot of small power-tools that he believed would come into general use. It must be better to cut with a power-hand saw than with an

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ordinary hand saw, or to make a mortice with a machine than to plug away with hammer and chisel. Against these facts had to be set another, i.e., that machines cost money. Another thing was that people were trying to develop scaffolding that could be moved up an inch at a time—which would go on moving up a building. A bricklayer would lay more bricks if always laying at the same level with regard to himself.

The effect of mechanisation on the volume of employment came under discussion, one speaker stating that we had two million unemployed in this country before the war, and America between 14 and 15 million.—Mr. Wynne-Edwards replied that unemployment was not due to mechanisation but to bad management. So long as man had nothing whatever to help him he was forced to live in a very simple way. As he had become more mechanised it had ceased to be necessary for everybody to be occupied all the time getting food and whatever else was essential to life. Mechanisation did not of necessity lead to unemployment; it might lead to more leisure.

POST-WAR HOMES EXHIBITION

A POST-WAR Homes Exhibition is to open on Thursday next, June 21, at Dorland Hall, Regent-street, London, S.W.1. The purpose of the Exhibition is to present to the public a wide survey of some of the most up-to-date methods employed in constructing, equipping and furnishing a home.

The urgency of the housing problem is expressed in a slogan on a wall in the Hall of Model Houses: "Homes for the People Priority No. 1." Here nine model furnished houses, all especially designed for this Exhibition, are displayed. They represent homes that have been designed for permanent residence, and methods of construction include prefabrication. A new technique has been employed in presenting the models: one-sixteenth of full size, their walls are made of transparent material, to permit a view of the inside arrangement of rooms and furniture, and will be continuously revolving on turntables. Photographs, drawings and samples of the actual materials used are displayed next to the models.

The nine models are exhibited by John Howard and Co., Ltd., Davis Estates, Ltd., Orlit, Ltd., Unity Structures, Ltd., G. T. Crouch, Ltd., The Keyhouse Unibuilt, Ltd., Prebuilt Constructions, Ltd., Wates, Ltd., and Simplified Brick Constructions, Ltd.

Another feature of this Exhibition is 12 full-scale, fully furnished rooms. Three rooms, by the British Electrical Development Association, are a kitchen, home laundry and dining-living-room. This electric home laundry provides complete facilities for washing, wringing and drying the weekly wash, and for ironing. It also provides a useful space for cleaning shoes and other odd jobs, without taking up valuable kitchen space. A nursery with a special "Mother's Corner" is another of the full-scale rooms. The "Mother's Corner" is fitted with cupboards for sewing utensils and a folding table. A gas-ring is built into the fitment. The floor is cork-tiled and wall surfaces within reach of a child's fingers are faced with a washable plastic sheeting.

Three kitchens, designed by Mrs. Darcy Braddell, are exhibited. Two, sponsored by Sir Lindsay Parkinson and Co., Ltd., have gas and electricity respectively as their sources of power. The third is a kitchen-living-room suitable for town or country and is sponsored by the Women's Advisory Committee of the Coal Utilisation Research Association. This kitchen-living-room has the new solid fuel multiple-duty cooker which also heats water continuously and gives open or closed fire and background heating to one or two bedrooms.

The staircase of the Exhibition is utilised for the display of wallpapers.

The house in relation to its neighbourhood and to other buildings is considered in a town-planning exhibit by the Housing Centre called "Up Your Street." Here garden-space, playing-fields, the architecture of a neighbourhood as a whole, the relation of a school to traffic streams and the safety of pedestrians in shopping streets are among the matters demonstrated.

An exhibit which is likely to create interest, in view of the present housing shortage, is the "Ortyx" Conversion Package Unit, also sponsored by Sir Lindsay Parkinson and Co., Ltd. This unit has been designed to convert rapidly three- and four-storey terraced and larger type houses into convenient self-contained flats. The unit consists of a fully equipped kitchenette and an up-to-date bathroom, complete with plumbing, gas or electric services. The only temporary fitment is the sit bath—this latter has been included as it can be obtained in quantities from sources outside foundries without interfering with the supply of normal baths for the emergency and more permanent type houses. A full-size bath can be substituted for the sit bath as soon as supplies of the latter are obtainable.

Fabricated in non-priority materials readily available, the entire unit is factory-made and the sections constructed to pass through doorways and up narrow staircases. It is easily pieced together on site in a few hours by labour not accustomed to building installation work.

The British Gas Council presents one full-scale labour-saving working-kitchen and a model of a living-room-kitchen.

The Exhibition, which has been organised by the *Daily Herald*, will be open to the public at 1 p.m. on the day of opening and thereafter daily, from 10.30 a.m. to 6.30 p.m. (Sundays excepted).

Demolition Wages.

The National Federation of Demolition Contractors announce an increase in basic wage for labourers on and from July 1 to the following:—

London: Inner, 1s. 10d.; Outer, 1s. 9¾d.

A, 1s. 9d.; A1, 1s. 8½d.; A2, 1s. 8d.; A3, 1s. 7¾d.

B, 1s. 7¼d.

The plus rates for other operatives will be added to these labourer's rates.

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BUILDING LABOUR

REGISTRATION OF EX-BUILDING AND CIVIL ENGINEERING WORKERS.

THE Ministry of Labour and National Service announces that, in view of the heavy demands for labour for housing and other urgent and essential constructional work, measures are being taken to promote the return to the building and civil engineering industries of men who have previously been employed in those industries, but are now employed elsewhere.

Such workers are to be specially registered under the Registration for Employment Order. The registration day is to-morrow, Saturday, June 16.

The men required to register are British subjects born between January 1, 1886, and June 16, 1927, both dates inclusive (*i.e.*, now aged approximately 18 to 60), who have been employed (whether under contract of service or on their own account) at any time since January 1, 1935, for a total period of 12 months or more in any capacity (whether skilled or unskilled) in a building or civil engineering contracting undertaking. They must register irrespective of whether they have already registered under any other Registration Order.

The only exceptions are:—

I. Men who on the date of registration are employed in building or civil engineering contracting undertakings.

II. Persons whose previous experience has been in canteen work only.

III. Persons who are normally exempted from liability to register under the Registration for Employment Orders, *e.g.*, men serving whole-time in or with the Armed Forces.

In view of the vital urgency of the need for their services, it is hoped that former workers will welcome this opportunity of returning. The circumstances of each individual will be carefully considered before any arrangements are made for transfer from existing employment. If any direction has to be given, there will be the usual right of appeal on grounds of hardship.

A LONDON BUILDING TRADE SPORTS ASSOCIATION

AT the instance of Major Leslie Shingleton, O.B.E., Chairman of the London Regional Joint Apprenticeship Committee, a London Building Trades Apprentices' Sports Association is to be formed under the auspices of the London Master Builders' Association and the National Federation of Building Trades Operatives (London Regional Council).

The objects of the Association are to encourage sports, games and the welfare of building trade apprentices in the London area. It will be under the control of a council of employers and operatives, which will promote and give financial support to local clubs in the areas, buy equipment and pay charges for playing fields, gymnasia and boats, and offer prizes and cups for competition.

Membership of the Association will be open to all apprentices, whether indentured or not, in the building industry in the London area and their employers.

The aim is, eventually, by the payment of a small weekly subscription from each apprentice and his employer, to make the Association self-supporting. Meanwhile a fund is to be raised to establish the Association, and Major Shingleton, as chairman of the committee appointed to set the scheme on foot, appeals to all builders and others interested in the London area to contribute. Major F. W. Stratton, F.I.O.B., of 16, Bruce-grove, Tottenham, N.17, is the hon. treasurer. All donations should be sent to him.

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 1st FEBRUARY, 1945.

(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors)

	Crafts-men.	Lab-ourers.
Aberavon	2/1	1/8
Aberdare	2/1	1/8
Abergavenny	2/1	1/8
Abingdon	1/11½	1/7
Accrington	2/1	1/8
Aldeburgh	1/11	1/6½
Aldershot	1/11½	1/7
Alfreton U.D.	2/1	1/8
Alnwick	2/0½	1/7½
Altrincham	2/1	1/8
Amble	2/0½	1/7½
Amersham	1/11½	1/7
Ammanford	2/1	1/8
Andover	1/11	1/6½
Ardingly	1/11	1/6½
Arundel	1/11	1/6½
Ascot	1/11	1/6½
Ashby-de-la-Zouch U.D.	2/1	1/8
Ashford (Kent)	1/11	1/6½
Ashford (Middlesex)	2/1	1/8
Ashington	2/0½	1/7½
Ashtead	2/1	1/8
Ashton-under-Lyne	2/1	1/8
Aylesbury	1/11	1/6½
Aylsham	1/11	1/6½
Bagshot	1/11	1/6½
Banbury	1/11	1/6½
Barnsley	2/1	1/8
Barnstaple	1/11	1/6½
Barrow-in-Furness	2/1	1/8
Barry	2/1	1/8
Basingstoke	1/11	1/6½
Bath	2/0½	1/7½
Batley	2/1	1/8
Beaconsfield	1/11½	1/7
Beccles	1/11	1/6½
Bedford	2/0½	1/7½
Berkhamsted	1/11	1/6½
Berwick	2/0½	1/7½
Beverley	2/1	1/8
Bexhill	1/11½	1/7
Bideford	1/11	1/6½
Biggleswade	1/11	1/6½
Billericay	2/0	1/7½
Birchington	1/11	1/6½
Birkenhead	‡2/1	¶
Birmingham C.B.	†2/1	†1/8
Bishop Auckland	2/1	1/8
Bishop's Stortford	2/0	1/7½
Blackburn	2/1	1/8
Blackpool	2/1	1/8
Blyth	2/1	1/8
Bognor Regis	1/11	1/6½
Bolton	2/1	1/8
Bournemouth(District)	2/0	1/7½
Bracknell	1/11	1/6½
Bradford	2/1	1/8
Bradford-on-Avon	1/11	1/6½
Braintree	1/11	1/6½
Brentwood	2/0½	1/7½
Bridgwater	1/11½	1/7
Bridlington	2/0½	1/7½
Brighouse	2/1	1/8
Brighton	2/0	1/7½
Bristol	2/1	1/8
Broadstairs	1/11	1/6½
Bromsgrove U.D.	2/0½	1/7½
Buckley	2/1	1/8
Bungay	1/11	1/6½
Burnham-on-Crouch	1/11	1/6½
Burnley	2/1	1/8
Burslem	2/1	1/8
Burton-on-Trent C.B.	2/1	1/8
Bury	2/1	1/8
Bury St. Edmunds	1/11	1/6½
Buxton	2/0½	1/7½
Byfleet	1/11½	1/7
Cambridge	2/1	1/8
Canterbury	1/11	1/6½
Cardiff	2/1	1/8
Carlisle	2/1	1/8
Carnforth	2/1	1/8
Castleford	2/1	1/8
Caterham	2/1	1/8
Chard	1/11	1/6½
Chatham	2/0	1/7½
Chelmsford	2/0½	1/7½
Cheltenham	2/0	1/7½
Chepstow	2/0½	1/7½
Chertsey	2/0	1/7½
Chester	2/1	1/8
Chesterfield M.B.	2/1	1/8
Chichester	1/11	1/6½
Chorley	2/1	1/8
Cirencester	1/11	1/6½
Clacton	1/11	1/6½
Cleveleys	2/1	1/8
Clitheroe	2/1	1/8
Cobham (Surrey)	2/0	1/7½
Colchester	2/0½	1/7½
Colwyn Bay	2/0	1/7½
Congleton	2/0½	1/7½
Coventry C.B.	2/1	1/8
Cranbrook	1/11	1/6½
Cranleigh	1/11	1/6½
Crawley (Sussex)	1/11	1/6½
Crewe	2/0½	1/7½
Cromer	1/11	1/6½
Crowborough	1/11	1/6½
Cuckfield	1/11	1/6½
Darlington	2/1	1/8
Darwen	2/1	1/8
Daventry M.B.	1/11½	1/7
Deal	1/11	1/6½
Denbigh Town	2/0	1/7½
Derby C.B.	2/1	1/8
Devizes	1/11	1/6½
Dewsbury	2/1	1/8
Didcot	1/11	1/6½
Diss	1/11	1/6½
Doncaster	2/1	1/8
Dorchester	1/11	1/6½
Dorking	1/11½	1/7
Dover	1/11	1/6½
Dovercourt	1/11	1/6½
Driffield	1/11½	1/6½
Droitwich M.B.	2/0½	1/7½
Dudley M.B.	2/1	1/8
Dunstable	1/11½	1/7
Durham City	2/1	1/8
Eastbourne	2/0	1/7½
E. Glam. (Mon. Val.)	2/1	1/8
East Grinstead	1/11	1/6½
Edenbridge	1/11	1/6½
Ely	1/11	1/6½
Epping	2/1	1/8
Exeter	2/0½	1/7½
Exmouth	1/11½	1/7
Fakenham	1/11	1/6½
Falmouth	1/11½	1/7
Fareham	2/0	1/7½
Faversham	1/11	1/6½
Felixstowe	2/0	1/7½
Filey	1/11½	1/7
Fleetwood	2/1	1/8
Flint	2/1	1/8
Folkestone	1/11	1/6½
Frinton	1/11	1/6½
Frome	1/11	1/6½
Gainsborough U.D.	2/0	1/7½
Gateshead	2/1	1/8
Gillingham (Kent)	2/0	1/7½
Gloucester	2/1	1/8
Godalming	2/0½	1/7½
Goole	1/11	1/6½
Gosport	2/1	1/8
Grantham M.B.	2/0½	1/7½
Gravesend	2/0	1/7½
Great Yarmouth	2/0½	1/7½
Grimsby	1/11	1/6½
Guildford	2/1	1/8
Guisborough	1/11½	1/7
Halifax	2/1	1/8
Hanley	2/1	1/8
Harpenden	2/0	1/7½
Harrogate	2/1	1/8
Hartlepools	2/1	1/8
Harwich	1/11	1/6½
Haslemere	1/11	1/6½
Hastings	1/11	1/6½
Hatfield	2/0½	1/7½
Haywards Heath	1/11	1/6½
Hednesford	2/0½	1/7½
Hemel Hempstead	2/0	1/7½
Henley-on-Thames	1/11	1/6½
Hereford	1/11	1/6½
Herne Bay	1/11	1/6½
Hertford	2/0½	1/7½
Heysham	2/1	1/8
Hitchin	2/0	1/7½
Hoddesdon	2/0½	1/7½
Holt (Norfolk)	1/11	1/6½
Horley	1/11	1/6½
Horsham	1/11	1/6½
Horwich	2/1	1/8
Huddersfield	2/1	1/8
Hull	2/1	1/8
Hunstanton	1/11	1/6½
Huntingdon	1/11	1/6½
Ilfracombe	1/11	1/6½
Ingatestone	1/11½	1/7
Ipswich	2/0½	1/7½
Isle of Thanet	1/11	1/6½
Isle of Wight	1/11	1/6½
Keighley	2/1	1/8
Kenilworth	2/1	1/8
Kettering M.B.	2/1	1/8
Kidderminster M.B.	2/0½	1/7½
King's Lynn	1/11	1/6½
Kirkham	2/1	1/8
Knowle	2/0½	1/7½
Lancaster	2/1	1/8
Leamington M.B.	2/1	1/8
Leatherhead	2/0	1/7½
Leeds	2/1	1/8
Leicester C.B.	2/1	1/8
Leighton Buzzard	1/11½	1/7
Letchworth	2/0	1/7½
Lewes	1/11	1/6½
Lichfield M.B.	2/0	1/7½
Lincoln C.B.	2/1	1/8
Littlehampton	1/11	1/6½
Liverpool	‡§2/1	¶
Llandudno	2/0	1/7½
Llanelly	2/1	1/8
London—		
12 m. radius	2/2½	1/9½
12-15 m. radius	2/2	1/9
Long Eaton U.D.	2/1	1/8
Longton	2/1	1/8
Loughborough M.B.	2/1	1/8
Louth M.B.	1/11½	1/7
Lowestoft	1/11	1/6½
Luton	2/0½	1/7½
Macclesfield	2/0½	1/7½
Maidenhead	2/0	1/7½
Maidstone	1/11½	1/7
Malvern U.D.	1/11½	1/7
Manchester	2/1	1/8
Manningtree	1/11	1/6½
Mansfield M.B.	2/1	1/8
March	1/11	1/6½
Margate	1/11	1/6½
Market Harborough	2/0	1/7½
Matlock U.D.	1/11½	1/7
Melton Constable	1/11	1/6½
Melton Mowbray	2/0	1/7½
Merthyr	2/1	1/8
Middlesbrough	2/1	1/8
Middleton	2/1	1/8
Middlewich	2/0½	1/7½
Milford Haven	1/11½	1/7
Morecambe	2/1	1/8
Mosley	2/1	1/8
Moseley	1/11	1/6½
Nantwich	2/0½	1/7½
Nelson	2/1	1/8
Newark-on-Trent	2/0½	1/7½
Newbury	1/11	1/6½
Newcastle-on-Tyne	2/1	1/8
Newcastle-u.-Lyme	2/1	1/8
New Forest (District)	1/11	1/6½
Newmarket	1/11	1/6½
Newport, Mon.	2/1	1/8
Newport Pagnell	1/11	1/6½
Northampton C.B.	2/1	1/8
Norwich	2/1	1/8
Nottingham C.B.	2/1	1/8
Nuneaton M.B.	2/1	1/8
Oakham U.D.	1/11½	1/7
Oldham	2/1	1/8
Ormskirk	2/1	1/8
Oxford	2/0½	1/7½
Oxted	1/11½	1/7
Paignton	2/0½	1/7½
Peterborough (Borough)	2/0½	1/7½
Plymouth	2/1	1/8
Pontefract	2/1	1/8
Pontypridd (District)	2/1	1/8
Port Talbot	2/1	1/8
Portsmouth	2/0½	1/7½
Preston	2/1	1/8
Pulborough	1/11	1/6½
Ramsgate	1/11	1/6½
Reading	2/0½	1/7½
Redditch U.D.	2/0½	1/7½
Redhill	1/11½	1/7
Ripon	1/11½	1/7
Rochdale	2/1	1/8
Rochester	2/0	1/7½
Rugby M.B.	2/1	1/8
St. Albans	2/0½	1/7½
St. Helens	2/1	1/8
St. Neots	1/11	1/6½
Saffron Walden	1/11	1/6½
Salisbury City	1/11	1/6½
Salisbury Plain	1/11	1/6½
Sawbridgeworth	1/11½	1/7
Saxmundham	1/11	1/6½
Scarborough	2/0½	1/7½
Scunthorpe	2/1	1/8
Selby	2/1	1/8
Sevenoaks	1/11½	1/7
Sheerness	1/11	1/6½
Sheffield	2/1	1/8
Shipley	2/1	1/8
Shoeburyness	2/0½	1/7½
Shoreham	2/0	1/7½
Shrewsbury M.B.	2/0½	1/7½
Sittingbourne	1/11	1/6½
Skegness U.D.	2/0	1/7½
Sleaford U.D.	1/11½	1/7
Slough	2/0	1/7½
Smethwick C.B.	†2/1	†1/8
Southampton	2/0½	1/7½
Southend-on-Sea	2/0½	1/7½
Southport	2/1	1/8
South Shields	2/1	1/8
Spalding U.D.	1/11	1/6½
Stafford M.B.	2/0½	1/7½
Staines	2/0	1/7½
Stamford M.B.	2/0	1/7½
Stevenage	2/0	1/7½
Stockport	2/1	1/8
Stockton-on-Tees	2/1	1/8
Stoke-on-Trent C.B.	2/1	1/8
Stourbridge M.B.	2/1	1/8
Stourport U.D.	2/0½	1/7½
Stowmarket	1/11	1/6½
Stratford-on-Avon M.B.	2/0	1/7½
Stroud	2/0	1/7½
Sunderland	2/1	1/8
Sutton Coldfield M.B.	2/1	1/8
Swaffham	1/11	1/6½
Swanage	1/11	1/6½
Swansea	2/1	1/8
Swindon	1/11½	1/7
Tamworth M.B.	2/0½	1/7½
Taunton	1/11½	1/7
Tenterden	1/11	1/6½
Thames Haven	2/1	1/8
Thetford	1/11	1/6½
Thorpe Bay	2/0½	1/7½
Todmorden	2/1	1/8
Tonbridge	1/11½	1/7
Torquay	2/0½	1/7½
Totnes	1/11	1/6½
Trowbridge	1/11	1/6½
Truro	1/11	1/6½
Tunbridge Wells	1/11½	1/7
Uppingham (Salop)	2/0½	1/7½
Uttoxeter U.D.	1/11½	1/7
Wakefield	2/1	1/8
Walsall C.B.	2/1	1/8
Walsden	2/1	1/8
Walton-on-Naze	1/11	1/6½
Ware	2/0½	1/7½
Warminster	1/11	1/6½
Warrington	2/1	1/8
Warwick M.B.	2/1	1/8
Wellington R.D.	2/0½	1/7½
Welwyn	2/0	1/7½
Welwyn Gar. City	2/1	1/8
Wells (Norfolk)	1/11	1/6½
West Bromwich C.B.	2/1	1/8
Westcliff-on-Sea	2/0½	1/7½
Weston-super-Mare	2/0	1/7½
Weybridge	2/0	1/7½
Weymouth	1/11	1/6½
Whitby	2/0	1/7½
Whitstable	1/11	1/6½
Widnes	2/1	1/8
Wigan	2/1	1/8
Wigton	1/11½	1/7
Willington	2/1	1/8
Wilmslow	2/1	1/8
Winchester	1/11½	1/7
Windermere	1/11½	1/7
Windsor	2/0	1/7½
Wisbech	1/11	1/6½
Witham	1/11	1/6½
Woking (District)	1/11½	1/7
Wokingham	1/11	1/6½
Wolverhampton C.B.	2/1	1/8
Woodbridge	1/11	1/6½
Worcester C.B.	2/0½	1/7½
Workington	1/11½	1/7
Worksop	2/0½	1/7½
Worthing	1/11	1/6½
Wrexham	2/0½	1/7½
Wroxham	1/11	1/6½
Wycombe	2/0	1/7½
Wymondham	1/11	1/6½
Yeovil	1/11½	1/7
York	2/1	1/8

† Plus 2d. per working day. ‡ Plasterers 2/1½. ¶ Tradesmen's Labourers, 1/7½. Navvies and General Labourers, 1/6½.
§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/– per week or 4d. per day Tool Money.

NOTE.—Carpenters, Joiners and Plumbers in all Towns and Districts (other than Birkenhead and Liverpool) receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged on craft processes is 1/7½ per hour. Women introduced to carry out work other than craft processes, 1/4 per hour.

THE SMALL BUILDER AND W.D. REPAIRS

FEDERATION OF MASTER BUILDERS' MEMORANDUM.

THE Federation of Master Builders has issued a memorandum on "The Medium and Smaller Builder and War Damage Repairs," designed to bring to the notice of all concerned the position to-day of the medium and smaller builders with regard to war damage repairs, and "the great injustice that is being meted out to them under the terms of the present contract which governs this work." The memorandum states: "In view of the varying scales of percentages operating throughout the country, the War Damage Commission introduced in June, 1944, a memorandum known as ROD.1, which for the first time set down in every particular the various charges and percentages which they would meet in dealing with war damage repair ultimately chargeable to them. This memorandum applies to each individual job undertaken, a job being construed as a property which carries for income-tax purposes a schedule "A" assessment. No aggregation or consolidation of accounts is implied or contained therein, and the percentage additions on prime cost vary having regard to the amount involved. It was therefore apparent that immediate revision would have to be effected in the existing Ministry of Home Security prime-cost contract, and assurances were given by various Government Departments to this Federation in this connection. Promises were made that a new contract would be drafted to take the place of the existing Ministry of Home Security prime cost contract, which would be based on ROD.1. Requests were made by our Federation for representation on the new Drafting Committee, for we felt that by so doing we could ensure that the new terms would be acceptable to the medium and smaller builder. Our offer was declined, it being stated that the same personnel would deal with this matter as had already been on the Drafting Committee of ROD.1.

"In view of the assurances given and the advent of the fly-bomb on June 15, 1944, more and more builders from the largest to the smallest were beseeched to go to the assistance of the local authorities, having secured the promise that the new contract which was being drafted would be applied to the work they undertook, until it can be safely said that in London in particular, at least 98 per cent. of the medium and smaller builders, by the end of 1944, were, with their full complement of operatives, working for the local authorities on war damage repairs. . . . The industry had to wait a matter of seven months before this new contract was evolved, and it was not until the beginning of December, 1944, that this Federation became acquainted with its terms in draft form. This new contract, known as MH/PC/1, definitely did not contain the terms as promised to the industry, and representations were immediately made to the Ministry of Works and the War Damage Commission. Protracted negotiations have taken place, but to date no satisfaction has been achieved.

"The hardship which this Federation is compelled to voice is that by the inclusion of an arbitrary aggregation clause in the new contract, a builder has to compute the total prime cost of work carried out to all properties in a particular borough or district in a thirteen-week period before he can ascertain from the relative schedule the percentage due to him, whereas he was promised financially equivalent terms to ROD.1. The medium and smaller builder who has been the mainstay of the Government in executing war-damage repairs is not being given a square deal. . . . We have left no stone unturned in endeavouring to arrive at a settlement of this dispute, which can be simply adjusted by the variation in the aggregation clause at certain levels of turnover. The Government, in forcing this contract in its present form on the industry as a whole, is sacrificing that section represented by the medium and smaller builder to the large contractor."

"THE BUILDER." PRICES AND WAGES

Until further notice and in order to devote more space to news, *The Builder* copyright "Prices Current of Materials" will be given in the first issue of each month only. Current changes will be given weekly as they occur. Rates of wages normally appear each week.

"ARCON" HOUSE ERECTED IN A DAY

An Arcon prefabricated house was erected under supervision of Croydon Borough Council on a site approved by the Ministry of Works at Long Lane, Croydon, on June 6, in eight hours, and was certified by the Council as habitable, with all services connected.

At 5 a.m. there was only the concrete slab foundation. At 1 p.m. the house, which consists of some 400 large prefabricated parts, was complete except for decoration. Drains were connected; lights could be switched on; there was hot water from the taps; and the workmen were able to make their tea in the kitchen. The test was carried out in wet weather by Taylor Woodrow, managing contractors to the Government for the supply of 25,000 Arcon houses. The object was to devise a practical schedule for speeding up erection by local contractors in all parts of the country.

Mr. Tom Fairclough, of Blackpool, was in charge of a team of 32 expert workmen, numbers on the site at any one time ranging from six to 19. Every operation was carefully phased so that as many jobs as possible were done simultaneously without interference with one another. Films are being made of the method, and instruction is to be given to local erection contractors in all parts of the country.

EIGHTH EDITION READY SHORTLY with new Adaptation Tables revised up to December, 1944.

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The continued demand for this well-known standard work has rendered necessary the production of a further large edition. It is therefore now re-issued in the form as last revised just prior to the outbreak of the European War, but with the addition of an up-to-date set of Adaptation Tables and Percentages revised to December, 1944, together with other useful information on War Damage Claims.

It will be realised that the unstable and varying conditions affecting all classes of building work which now prevail make it impossible to attempt any general revision of the prices until a return to normality under settled peace conditions is assured. In the meanwhile it is felt that with the assistance of the up-to-date information now embodied, the book will continue to serve a useful purpose to all engaged in the Building Trades.

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THE SCOTTISH BUILDER

NEW BUILDINGS

DUMBARTONSHIRE.—Plans in hand for extensions to the biscuit works at Great Western-rd., Drumchapel, for Beattie's Biscuits, Ltd., Cranston-st., Anderston, the architects being John Keppie & Henderson, 196, West Regent-st., Glasgow.

GLASGOW.—Plans prepared for new workshops for J. Fisher & Kennedy, at Millerfield, by Thomas Cordiner, 261, West George-st.

GLASGOW.—Plans prepared for new Govan Electrical House at Helen-st., by John MacNeil & Co., Helen-st.

HILLFOOT.—New Dumbartonshire Clinic propose plans by Joseph Weekes, 18, Park-circus, Glasgow.

FUTURE CONSTRUCTION

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 16.

†**Newcastle-on-Tyne.**—Alterations in Town Hall. City Estate Surveyor, Town Hall. Tender by June 30.

JUNE 18.

†**Hungerford R.D.**—Erection of 26 permanent houses on 3 sites. F. H. Floyd, architect, St. Nicholas House, West Mills, Newbury. Dep. £1 1s.

JUNE 20.

*†**Isle of Ely C.C.**—Erection of extensions at County Library, Gordon-ave., with alterations to existing premises. R. D. Robson (A.), County A., County Hall, March, Cambs. Dep. £2 2s. Tenders by July 18.

JUNE 22.

Derbyshire E.C.—Erection of kitchen and dining-room at Shottle Endowed School. County A., County Offices, St. Mary's Gate, Derby. Dep. £2 2s.

JUNE 23.

Dorking U.D.—4 houses at Fraser Gardens. S. S. Gettings, S., Pippbrook, Dorking. Dep. £2 2s.

*†**Isle of Ely C.C.**—Erection of 29-bay standard hut to form 5 classrooms, cloakroom and lavatory accommodation at Ely High School. R. D. Robson (A.), County A., County Hall, March, Cambs. Dep. £2 2s. Tenders by July 9.

JUNE 25.

Sturminster R.D.C.—Erection of 32 permanent houses and incidental layout works on sites. J. Steptoe, C., Council Offices, Sturminster Newton, Dorset.

JUNE 27.

Uttoxeter R.D.—12 houses at Rocester. C. E. Ingham, S., Council Offices. Dep. £2 2s.

JUNE 29.

Manchester T.C.—Piggeries, etc., Highfield Farm, Levenshulme. City A., Town Hall. Dep. £1 1s.

Scarborough T.C.—Rebuilding of 8 houses and flats. H. V. Overfield, B.E., Town Hall.

JULY 2.

*Cowes U.D.C.**—8 houses on Mill Hill estate. E. and S., Northwood House, Cowes. Dep. £1 1s.

*Norwich T.C.**—34 houses, Dereham-rd.; 14 houses, Mile Cross-rd.; and 38 houses, Southwell-rd. and Trafalgar-st. City A.'s Office, City Hall. Dep. £1.

JULY 9.

West Bromwich C.B.—Erection of 48 houses on Harvills Hawthorn estate. J. G. Jefferson, B.E. and S., Town Hall. Dep. £1 1s.

*Worcester T.C.**—Repair and redecoration of certain buildings at Municipal Homes, Tallow Hill. City E., 22, Bridge-st. Dep. £2 2s.

JULY 14.

*Weymouth and Melcombe Regis T.C.**—Completion of 28 houses in Hereford-rd. B.E. and S., 14, Frederick-pl., Weymouth. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

JUNE 16.

†**Durham C.C.**—Internal painting at 3 central kitchens. F. Willey, 34, Old Elvet. Tenders by July 4.

JUNE 20.

Lanchester Joint Hospital Board.—External and internal decoration at Langley Park I.H. C. J. Lander, Clerk to Board, Lanchester, Durham.

Liverpool T.C.—Interior decoration of Municipal Offices. C.E. and S., Municipal Offices.

Marshland R.D.C.—External painting of house. Housing S., Council Offices, Alexandra-rd., Wisbech.

Tendring R.D.—External painting of 39 houses on 4 sites. S. E. Carroll, E. and S., Council Offices. Weeley, Essex.

JUNE 21.

Leeds T.C.—Painting at Meat Market and Corn Exchange. W. S. Cameron, C.E., Civic Hall.

Warrington T.C.—Painting and decorating at various schools. B.S.

JUNE 22.

Barnsley.—Internal painting and decorating at Barnsley and District Holgate Grammar School. H. V. Lightfoot, Clerk to Governors, Ed. Office, Town Hall.

Bristol T.C.—External painting of 50 houses. R. J. Allerton, 1-2, Lansdown-pl., Clifton. Dep. £1.

Leeds T.C.—Painting at Meanwood Park Colony. W. S. Cameron, City E., Civic Hall.

JUNE 25.

Salop C.C.—External painting and repairs at Wellington Public Assistance Institution. A. G. Chant, County A., 5, Belmont, Shrewsbury.

JUNE 26.

Keighley Grammar School.—Painting, for Governors. S. H. Park, Clerk.

JUNE 28.

Bristol T.C.—Painting, etc., of Schools. G. H. Sylvester, Ed. Officer, 2, Cecil-rd. Dep. £1 1s.

Luton T.C.—Renovations and decorating at various schools. B.E.

JUNE 30.

Doncaster Royal Infirmary.—Outside painting. R. Lancaster, Sec.-Supt.

JULY 9.

Worthing T.C.—Painting various schools. P. E. Harvey, School Architect, Town Hall.

ROADS, SEWERAGE AND WATER WORKS

JUNE 20.

Cheltenham R.D.C.—Construction of roads and sewers. Rainger and Rogers (FF.), 29, Rodney-rd., Cheltenham. Dep. £2 2s.

Hayes and Harlington U.D.—Roads and sewers at Cranford Park estate. F. J. N. Polkinhorne, E. and S., Town Hall, Hayes, Middx. Dep. £1 1s.

JUNE 22.

Blackpool T.C.—Construction of roads and sewers. Acting B.E. and S. Dep. £1 1s.

Llangefni U.D.C.—Provision, laying and jointing of approx. 1,670 yds. of 4-in. and 5-in. cast-iron pipes. H. B. Ward, M.Inst.C.E., 38, The Temple, Dale-st., Liverpool 2. Dep. £3 3s. (payable to Council).

Middlesbrough T.C.—Construction of main sewer from Cargo Fleet-la. to Ladgate-la. T.C. Dep. £10 10s.

JUNE 23.

Macclesfield T.C.—Construction of roads and sewers at Bollin Brook site. B.E. Dep. £2 2s.

Manchester T.C.—Construction of roads and sewers at Victoria-ave., East. City S. and E.

Southend-on-Sea C.B.—Making-up and sewering. R. G. Baxter, B.E. and S., Municipal Buildings. Dep. £2.

JUNE 25.

Billingham U.D.—Roads and sewers for 100 temporary houses. E. and S., Council Offices. Dep. £2 2s.

Cardiff T.C.—Construction of roads and sewers at Lumney. City E. Dep. £2 2s.

Luton R.D.C.—Provision and laying of approx. 2,500 lin. yds. of 9-in. spun-iron water mains. E. and S. Dep. £2 2s.

Reading C.B.—Construction of roads and sewers at Whitley. B.S. Dep. £2 2s.

JUNE 27.

Portsmouth T.C.—760 yds. of roadway and 730 yds. of sewers with site work for 104 bungalows. J. Parkin, M.Inst.C.E., C.E., Municipal Offices, Southsea. Dep. £2 2s.

JUNE 28.

Bury St. Edmunds T.C.—Housing site preparations, Mildenhall-rd. N. C. Goldsmith, M.B.E., Borough Offices. Dep. £2 2s.

JUNE 30.

Glossop T.C.—Site preparation for 50 temporary houses. Geo. Faulds, B.S., Municipal Buildings.

Petersfield U.D.—Supply and laying of 577 yds. spun-iron pipes and laying only of further 416 yds. H. Longbottom, F.S.I., E. and S., Town Hall.

Tynemouth C.B.—Construction of roads and sewers. B.S., 19/20, Howard-st., North Shields. Dep. £2 2s.

Walton and Weybridge U.D.—Sewers and road works on 3 housing sites. E. and S., Council Offices, Walton-on-Thames.

JULY 4.

Worksop R.D.—Construction of sludge-drying beds. Harworth. Silcock and Simpson, consultants, 10, Park-row, Leeds. Dep. £5.

JULY 10.

Tottenham T.C.—Trial bore and excavations for Stonebridge Brook reconstruction. J. D. and M. Watson, MM.Inst.C.E., 3, Old Queen-st., S.W.1. Dep. £2 2s. (after June 22).

NO DATE.

Chichester T.C.—Roads and sewers on two housing sites, using German labour. Eric Banks, T.C., Council Offices.

PUBLIC APPOINTMENTS

*Full details of Public Appointments marked * are advertised elsewhere in this issue. Those marked † have been advertised in previous issues.*

JUNE 23.

†**Brighton Technical College.**—(a) Lecturer in Building Subjects; (b) Teacher of Carpentry and Joinery; (c) Teacher of Plumbing.

†**East Riding C.C.** — (a) Engineering Assistant; (b) Quantity Surveyor; (c) Quantity Surveyor's Assistant.

†**Frimley and Camberley U.D.C.**—Architect to design approx. 100 permanent houses.

†**West Riding E.C.**—(a) Two Assistant County Education Architects; (b) Two Senior Assistant Architects.

JUNE 25.

†**Huddersfield Technical College.**—Lecturer in Department of Building.

JUNE 26.

***Derby C.B.**—Building Works Manager.

JUNE 27.

***Nottingham T.C.**—Assistant Architect.

JUNE 30.

***Dudley C.B.**—Borough Architect.

East Glamorgan J.P.C.—Assistant Planning Officer (£425) and Grade 2 Assistant (£225), both plus war bonus. B. M. Murphy, Clerk, Town Hall, Mountain Ash.

***Herefordshire C.C.**—(a) 1 Assistant Architect, Grade T.1; (b) 4 Senior Architectural Assistants, Grade T.2; (c) 6 Architectural Assistants, Grade T.3; (d) 2 Architectural Assistants, Grade T.4; (e) 2 Architectural Assistants, Grade T.5; (f) 1 Assistant Quantity Surveyor, Grade T.2; (g) 1 Quantity Surveyor's Assistant, Grade T.3; (h) 1 Assistant Building Surveyor, Grade T.3; (i) 1 Assistant Building Surveyor, Grade T.4.

†**Montgomery C.C.**—Architectural Assistant (male or female).

†**Northants C.C.**—Planning Assistant.

***Overseas Employment.**—Assistant Architect for Government of Aden.

***Walsall C.B.**—2 Architectural Assistants.

JULY 2.

***Godalming T.C.**—(a) Architectural Assistant; (b) Engineering Assistant.

JULY 6.

***Plymouth T.C.**—(a) Senior Assistant (Hospitals Section) Architect; (b) Senior Assistant Architect (Housing Section); (c) Assistant Architect.

JULY 7.

***County of Lincoln (Parts of Kesteven).**—Two Architectural Assistants.

JULY 13.

†**Middx. C.C.**—County Architect.

JULY 23.

***North Riding C.C.**—Assistant Planning Officer.

SEPTEMBER 1.

***Middleton T.C.**—Housing Manager.

NO DATE.

***Barking T.C.**—Assistant Architect.

***Frimley and Camberley.**—C.o.W.

***University of Reading.**—Clerk of Works.

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TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Barrow-in-Furness.—Rebuilding 22 houses and flats at Greengate-st. South, for T.C. J. H. Flitcroft, B.S.: *Nicholson & Wright, Ltd., Cable-st., Lancaster.

Birkenhead.—Restoration of 28 non-parlour 3 and 4 bedroomed houses at Worcester-rd., Observatory-rd. and Brow-rd., Vyner estate, for T.C. B. Robinson, B.E.: *Lloyd & Cross, Ltd., 68, Argyle-st., Birkenhead, £25,239 18s. 10d.

Bolton.—Construction of roads, footpaths and sewers for advance preparation for housing sites, for approximately 2,000 houses, for group of local authorities. C. Knight, B.E.: *Bierrum & Partners, Ltd., 10, Sunbury-hill, Harrow-on-the-Hill, Mddx, £113,102.

Chichester.—Construction of two sub-station buildings and extension of existing building, for T.C. C.E.: *West Sussex General Builders, The Hornet, Chichester, £888.

Greenock.—For (a) Work at Peat-rd. Housing Scheme and (b) restoration of cemetery buildings, for T.C.: (a) *Robert Johnston, Greenock, £13,645; (b) *W. H. Kirkwood, Ltd., Greenock.

Lancashire.—Buildings: *J. Turner & Sons (Preston), Ltd., William Henry-st., Preston.

Lancashire.—Buildings: *J. Gregson & Son, 3, Newhouse-rd., Blackpool.

Liverpool.—Works, for T.C. L. H. Keay (F.), City A., Blackburn-chbrs., Dale-st. School canteen, Rose-la. County school: *W. Lothian, 4, Broadgreen-rd., Liverpool 14, £2,456; kitchen and canteen, Hunts Cross school, Kingsthorne-rd.: *Rimmer Bros., Ltd., Cheadle-av., Stoneycroft, Liverpool 13, 2,470.

¶**London (Air Ministry).**—The Directorate of Contracts, A.M., has placed the following contracts of £500 or over for week ended June 9:—

General maintenance work: A. J. Arnold, Ltd., Chelmsford; G. Reid & Son, Ltd., Catrine, Ayrshire; E. J. Logan, London, S.W.15; Grant & Burns, Ltd., Glasgow; G. A. Kenney & Sons, Ltd., Ipswich; and Peter Conlon, Manchester 16.

Electrical work: W. F. Graham & Co., Belfast, N. Ireland; and B. French, Ltd., Manchester 1.

Surfacing work: John Howard & Co., Ltd., Blunsdon, Nr. Swindon, Wilts.

Surface dressing wor: J. & R. W. Taggart, Belfast; J. Miskimmin & Sons, Ltd., Belfast; and R. J. Maxwell & Son, Coleraine, N. Ireland.

Painting work: Clark & Fenn, Ltd., London, S.W.4.

Miscellaneous structural steelwork: Tees Side Bridge & Eng. Co., Ltd., Middlesbrough.

Agricultural work: J. Burley & Sons, Ltd., London, S.W.15.

Heating work: G. N. Haden & Sons, Ltd., London, W.C.1.

Roofing work: W. S. Try, Ltd., Uxbridge, Middx.

Civil engineering work: Robt. Colhoun, Ltd., Londonderry.

¶**London (Ministry of Works).**—Contracts placed by M.O.W. during week ending May 31:—

Cornwall: Building, Carkeek & Sons, Ltd., Tolgus Hill, Redruth, Cornwall.

Devonshire: Building, Exeter Building Contractors, Ltd., 14, Dix's Field, Exeter.

Herts: Building, Rice Bros. (Builders), Hempstead-rd., Watford.

Kent: Building, W. Norman & Son, Ltd., 297, Brook-st., Erith; Ringmer Building Works, Ltd., Ringmer, Lewes, Sussex.

Lancs: Building, R. W. Willan, 2, Brooklands-rd., Sale, Ches.

Warwickshire: Building, Wilson Lovatt & Sons, Ltd., Clarence-st., Wolverhampton; civil engineering, C. Bryant & Sons, Whitmore-rd., Small Heath, Birmingham; building, W. B. & F. T. Archer, Holyhead Works, Rookery-rd., Handsworth, Birmingham.

Worcs: Building, Spicers (Builders), Ltd., Ombersley-rd., Worcester.

Yorks: Building, W. J. Rendall & Co., South Parade, Pudsey, Yorks; George Longden & Son, Ltd., St. Peter's-cl., Sheffield 1.

Middx: Building, Messrs. Perry's (Ealing), Ltd., 75, Uxbridge-rd., Ealing, London, W.5.

Surrey: Building, Messrs. Walker (Tooting), Ltd., Cadnam House, Beddington-la., Croydon.

Middx: Building, G. Percy Trentham, Ltd., Long-la., Hillingdon, Middlesex.

Newcastle-on-Tyne: Building, James R. Rutherford & Sons, Ltd., 123, Jesmond-rd., Newcastle-on-Tyne.

Surrey: Building, W. H. Gaze & Sons, Ltd., 23, High-st., Kingston-on-Thames.

Glamorgan: Building, Gee Walker & Slater, Mount Earl, Bridgend, Glamorgan.

¶**London (M.O.W.).**—The following building contracts were placed by the Ministry of Works during week ending June 7:—

London: Charles Griffiths, 55, Park-ave., E.6; *Bedfordshire:* Luton Building Co., Ltd., Church-st., Luton; *Cambridge:* Kerridge (Cambridge), Ltd., Sturton-st., Cambridge; *Derbyshire:* John H. Brough & Co. (Builders), Ltd., Station-rd.,

Beeston, Notts; *Devonshire:* Exeter Building Contractors, Ltd., 14, Dix's Field, Exeter, and Dudley Coles, Brookland Lodge, Hartley, Plymouth; *Essex:* G. H. Miller, Cheridan-works, Thorpe-rd., E.7, and Henry Everett & Son, 70, Barrick-st., Colchester, Essex; *Glamorgan:* Wm. Cowlin & Sons, Ltd., Stratton-st., Bristol, 2; *Hampshire:* E. Warren Baxter & Co., Ltd., Willenhall-rd., Wolverhampton; *Hertfordshire:* Ekins & Co., Ltd., Great Northern Works, Hertford; *Kent:* Gough Cooper & Co., Ltd., Wilmington House, Wilmington, nr. Dartford; *Lancashire:* Selton Building Co., Ltd., 24, Fenwick-st., Liverpool, Hampton, Son & James, 51, Marsh-st., Liverpool 1; John Dickinson & Co. (Bolton), Ltd., Fairclough-street, Bolton, Lancs, and P. Hamer, Park-st., Swinton; *Middlesex:* Perrys (Ealing), Ltd., 75, Uxbridge-rd., W.5, J. Lawson & Co., Ltd., 28, Park-rd. North, W.3, and C. P. Roberts & Sons, 31, High Holborn, London, W.C.1; *Norfolk:* Rattee & Kett, Ltd., Station-rd., Cambridge; *Northamptonshire:* Chowns, Ltd., Edinburgh-rd., Northampton; *Nottinghamshire:* Herbert Baggaley, Ltd., Baums-ln., Mansfield, and H. W. Moult, 68, Nottingham-rd., Stapleford; *Staffordshire:* C. Cornes & Son, Litchfield-st., Hanley, Stoke-on-Trent, Deacon & Boardman, Ltd., Algernon-st., Walsall, and Eadie & Co., 29, Waterloo-rd., Wolverhampton; *Warwickshire:* Higgs & Hill, Ltd., Warwick-rd., Coventry, and E. Harris & Son, 50, Cope-st., Coventry; *Yorkshire:* Walter G. Birch (Harrogate), Ltd., Springfield-ave., Harrogate, and Lister Brook Co., Ltd., 11, Elland-rd., Brighouse.

London (W.D.).—Following are works contracts placed by War Dept., for week ended June 2:—

Cumberland: Roadwork, James Millar & Sons, Carlisle; and Bituminous Surfacing, Ltd., Manchester 12.

Westmorland: Concrete work, Nicholson & Wright, Ltd., Lancaster.

Yorkshire: Building work, W. Thompson, Northallerton, Yorks.

Kent: Miscellaneous work, G. E. Wallis & Sons, Ltd., Maidstone.

Newcastle-on-Tyne.—For roads and site work for 152 temporary houses, for City C.: *McLaren & Co., Ltd., Belford, Northumberland, £12,196 10s.

Northampton.—Construction of roads and sewers for advance preparation of housing sites, for R.D.C. R. J. Miller, E. & S.: † Hadsphaltic Construction Co., Ltd., Minories, London, E.C.3, £90,212.

Northumberland.—Conversion of domestic science room into canteen kitchen at Morpeth Junior and Infants' school, for E.C.: *J. W. Urpeth, Bedlington, £969.

Sheffield.—Works, for T.C.: Rebuilding of houses (8) at Southey Hill and Cowper-cres., Parson Cross estate (8): *Reeves Charlesworth, Holme Hill, £6,850; 10 at Kyle-cres: *Wm. Memmory & Son, Ltd., Swallownest, £6,961; 16 at Musgrave-cres., Shirecliffe: *Melling Bros., Ltd., Balfour-rd., Attercliffe 9, £13,104 (all of Sheffield).

Staffs.—Buildings: *G. & J. Seddon, Ltd., 55, Duke-st., Fenton, Stoke-on-Trent.

Tynemouth.—Repairs at Queen Victoria school, for E.C.: *B. Peel, Ltd., East Mill Works, North Shields, £1,351; reinstatement of Municipal High school, damaged by fire, for E.C.: *Hastie D. Burton, Ltd., King-st., North Shields.

York.—Erection of 218 temporary houses at Hob Moor Fields, Kingsway West, etc., for T.C. C. J. Minter, City E.: *W. Birch & Sons, Ltd., Spon-la., York.

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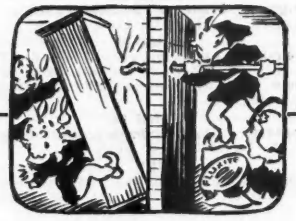

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